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Paper Output in 1942 Is 16,522,000 Tons

Production is Estimated 4.5 Per Cent Lower Than All-Time Record in 1941—Operating Ratio 90 Per Cent—Writing Paper Production of 827,000 Tons Increased 12 Per Cent to Set A New Record.

By M. C. Dobrow, Executive Secy., Writing Paper Mfrs. Association

In the last quarter of 1941 and the first quarter of 1942, the paper industry achieved production beyond the dreams of machinery builders or paper mill operators. This is now the famous base period of M-241. During that six months' period the paper industry operated at a rate of 18,600,000 tons per year.

In the second quarter of 1942, many branches of the industry began to have serious let-downs in demand, and by summer some people felt that we were in an old-fashioned business cycle of the paper industry. The recession, which apparently was from over-inventory, lasted but a few months. Then the basic factors, high rate of paper consumption, decreasing volume of raw materials, began to assert themselves, and the ratio between supply and demand again came into balance in October.

Total U. S. paper production declined 4% in 1942. Tonnage produced was 16,522,000 tons, as compared with 17,304,000 tons in 1941 which is the all-time high mark.

For the year as a whole, operations in 1942 were 90% of capacity. Under the first WPB curtailment order, which was effective for November and December 1942, industry operations were limited to 87% of capacity.

In the past the volume of paper consumed has generally paralleled the production and distribution of goods in the United States. There are, of course, considerable differences in these trends for different types of paper and the related usages. In a war economy some of these relationships are likely to be greatly altered. In fact, the industry has at times been more or less at sea because so little is known about the end uses of products. Also, the great shift from the production of durable-consumer goods to the production of implements of war raised considerable doubts as to the requirements for and consumption of paper.

In 1942 the Federal Reserve Board index of production averaged 180 (1935-1939 = 100). This was a gain of 15% over the great peak of 1941, 67% over 1939. It is important to note, however, that in 1942 durable goods industries gained 30% over the previous year, and non-durable goods also indicated a gain of 4%. The gain in non-durable goods was a surprise, because many had expected a decline.

It might be said that whatever has been lost in paper consumption has been almost entirely due to reduced volume of direct-by-mail advertising. This type of advertising for the sale of automobiles, refrigerators, radios, etc., has practically ceased with the termination of production of these products. On the other hand, newspaper and magazine advertising, as well as circulation, have been sustained at

UNITED STATES CAPACITY AND PRODUCTION BY GRADES

Grade	1939 Capacity	1939 Actual Production	1939 %	1940 Capacity	1940 Actual Production	1940 %	1941 Capacity	1941 Actual Production	1941 %	1942 (Estimated) Capacity	1942 (Estimated) Actual Production	1942 (Estimated) %
Writing Paper	747,100	594,594	80	728,190	599,452	82	750,000	737,827	98	850,000	827,000	97
Other Fine Papers	165,570	128,508	78	165,720	136,301	82	224,800	211,580	94	230,000	218,000	95
Book Paper (Uncoated)	1,921,260	1,534,591	80	1,959,820	1,655,423	84	2,045,000	2,026,291	99	2,000,000	1,830,000	91
Wrapping Paper	2,609,580	2,238,993	86	2,840,220	2,500,818	88	2,925,000	2,745,815	94	3,125,000	2,742,000	88
Newsprint Paper	988,280	954,259	97	1,075,080	1,056,304	98	1,080,000	1,045,269	97	1,000,000	981,000	98
Paperboard	7,530,960	6,025,494	80	7,468,770	6,379,074	85	8,300,000	8,146,382	98	8,450,000	7,500,000	89
Tissue Paper	772,480	648,429	84	809,290	733,894	91	920,000	910,493	99	1,000,000	980,000	98
Building	938,370	659,090	70	958,210	682,460	71	950,000	721,312	76	900,000	750,000	83
Groundwood	631,470	540,342	86	617,830	550,453	89	660,000	641,409	97	660,000	596,000	90
All Other Papers	252,340	185,342	73	267,840	189,530	71	145,200	117,765	81	135,000	98,000	73
Total	16,557,410	13,509,642	82	16,890,970	14,483,709	86	18,000,000	17,304,143	96	18,350,000	16,522,000	90

Courtesy Writing Paper Manufacturers Association

levels better than had been anticipated. Institutional advertising of many types continues because producers wish to keep the branded names of their products before the public even though further sales cannot be made until their production is resumed after the war. Magazines are more interesting and the public has more time to read because we have returned to the habits of a generation ago when movement from place to place in automobiles was not a national pastime.

In the coarse paper field, paper has found increasing use for packaging foods which have to be sent long distances and must be resistant to various climatic conditions. Paper has also formed an important substitute for tin and other critical metals.

In actual tonnage, the largest war contribution of the paper industry is in paperboard packaging. An important contribution to service of supply in the war was made in the development of cartons which resist water without damage to contents. The delivery of supplies in places where dock facilities are poor and under great difficulties of war has made such developments of great importance.

There has been a gain, rather than a decline, in consumption of writing papers, largely used for business transactions, business forms and correspondence. Paper consumption in these fields has suffered very little from curtailment of civilian goods industries because that curtailment has been more than made up by the war and war industries. In this highly mechanized war, paper is a greater service item than it was in the first World War. Consumption of paper by the U. S. Government and all its agencies has been enormous.

Writing Paper Industry Goes to War

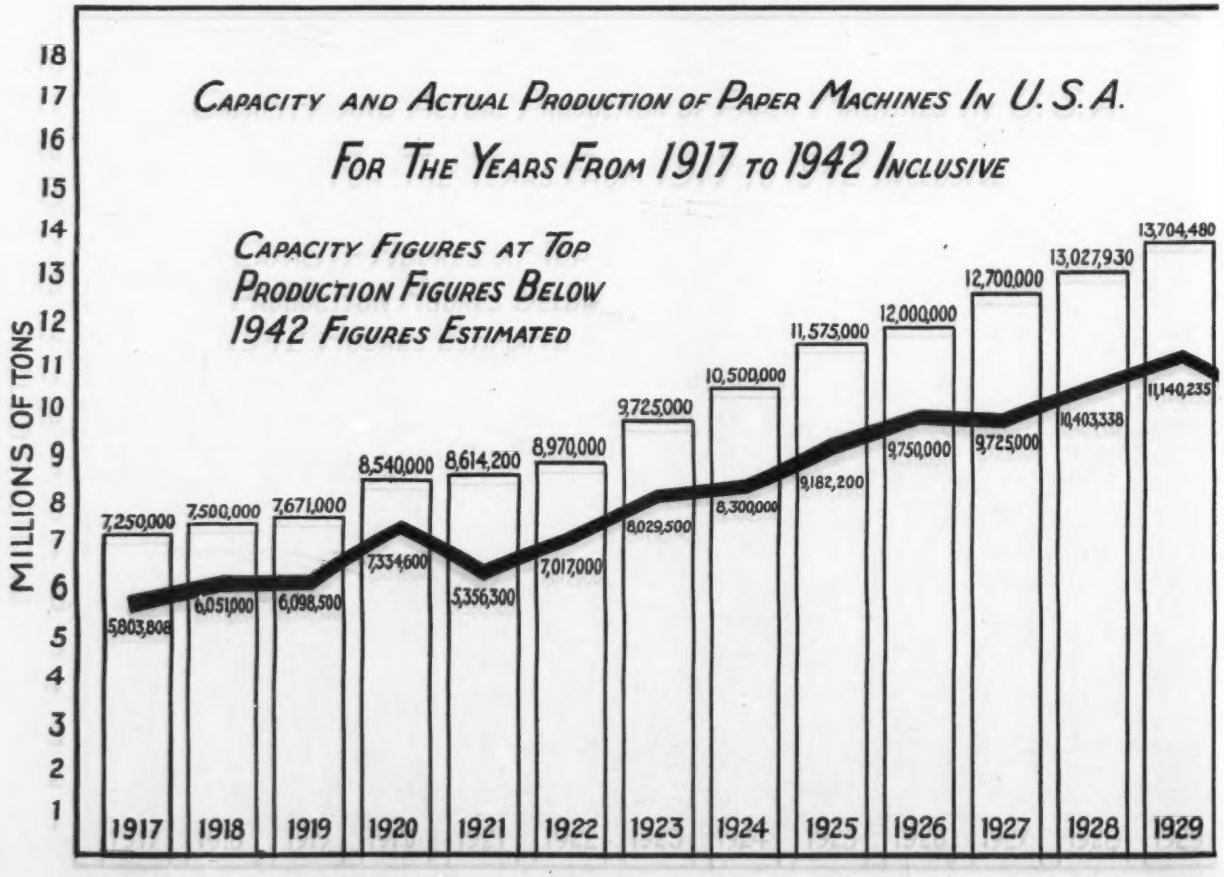
Writing papers are in the war. They carry the plans for war production. They carry the orders that draft our men and that supply them with food, clothes and equipment. Writing papers will carry the military plans and orders with which we shall win the war.

The following facts and figures show how the distribution of writing papers has been diverted to serve our war needs.

In the first six months of 1942, 43% of the production of rag content writing papers in the United States was sold directly to the U. S. Government and its agencies; in the second six months, 57% of the production went to satisfy the demand from these sources. Tonnages of some of these papers going to the U. S. Government have reached, as in the instance of blue print papers, more than 80% of the total production, and in the case of manifold papers, more than 70% of the total production.

Of the 43% which went into the commercial market in the second six months, it is estimated that more than half went to civilian firms engaged in the production of war goods. Therefore, in the latter half of 1942, 75% to 80% of the total production went to war production, either through civilian firms or direct to government use.

Shipments of sulphite writing papers to the U. S. Government and its agencies in the first six months



of 1942 were 14% of the entire U. S. production of these papers. In the latter part of the year, new orders received from the Army, Navy and other government sources, because of expansion and increased personnel, served to accelerate tonnages going to the U. S. Government. In the second six months of 1942, 24% of the total production of these papers went to these users. Of the balance going to the commercial market, it is believed that more than half moved to civilian firms engaged in the production of war goods.

It is conservatively estimated, therefore, that some 60% of the total sulphite writing paper production in the second six months of last year were for war needs—by way of government use or concerns in war production.

Papeterie papers were given practically no credit for direct government purchase because substantially all the paper was sold to manufacturers converting paper into stationery. In a recent check made by stationery manufacturers, it was found that more than 16% of their production was being sold direct to Army Post Exchanges and other government agencies.

Aside from the consumption by the U. S. Government and civilian firms engaged in the production of war goods, writing paper is a necessity for such essential civilian organizations as insurance companies, banks, public utilities, railroads, etc., as well as for state and local governments.

Paper in 1943

Now, what about the paper industry for 1943?

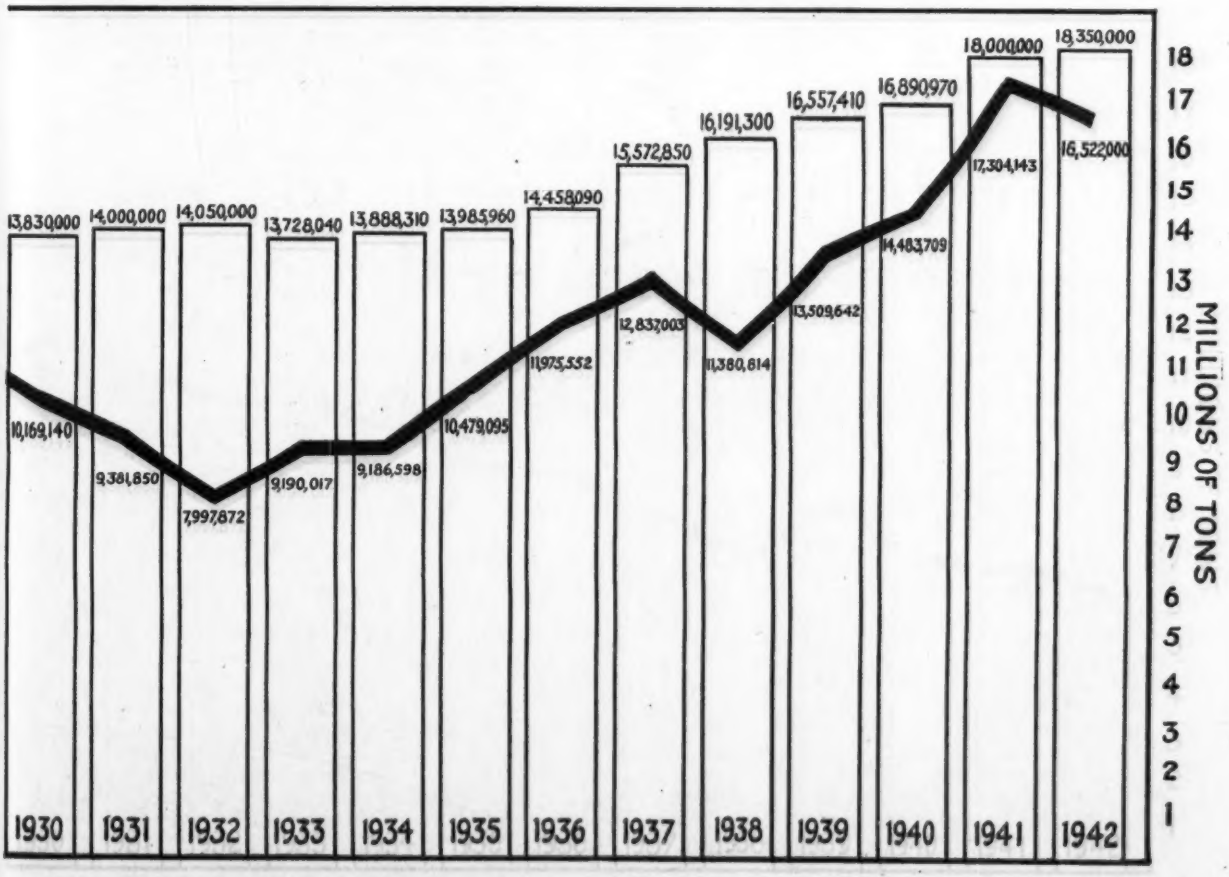
To appraise the situation, a study of the economic factors and the statistics is only a part of the picture. We have to examine the facts in the light of the government regulations, because the procurement of raw materials, production of paper, hiring of labor, payment of wages and salaries, sale of goods, shipment of goods, all of that is now directly or indirectly under government control. Policies of each individual mill can only be made in a limited way and only in the frame-work of these government regulations.

WPB Order M-241

On October 31, 1942, WPB issued Order M-241 limiting each paper mill's production to the average monthly tonnage for the six months ending September 30, 1942. This was in the nature of a temporary "freeze" order, and it was indicated that the problem would be dealt with in subsequent orders.

Meanwhile, shortages of labor, pulpwood, trucks and tires in the woods have increased, heralding a decline in the available supply of wood pulp for paper from last year's 10,700,000 tons to about 8,600,000 tons estimated for 1943. This, together with increased estimates of paper requirements by claimant agencies, made it necessary for the War Production Board to develop a new program. On January 8, 1943, there was issued a revised M-241, with several new orders curtailing consumption of paper in the manufacture of certain listed articles, as well as in printing and publishing.

Revised M-241 changes the base period from the six months ending September 30, 1942, to the six months ending March 31, 1942.



At the peak period of paper production (October 1, 1941 to March 31, 1942), the tonnage of paper and paperboard of all types was estimated to run at the rate of about 4,650,000 tons per calendar quarter. Under M-241 as originally issued, the tonnage of paper and paperboard of all types is estimated to have run about 3,900,000 tons per quarter. Under Order M-241 as amended in January, the effect of the selective quotas on facilities, restricting certain classes of papers, and allowing increased production of others for which requirements are increasing, the production in the first calendar quarter of 1943 is estimated to be 4,100,000 tons.

It is evident from these facts that this production cannot long be continued with the present outlook for supplies of wood pulp. There is need on the one hand for increased production of wood pulp, and on the other hand great need for conservation of wood pulp. Conservation of wood pulp in the paper industry without reducing necessary paper production is possible by greater substitution of secondary materials. Greater use of waste materials will reduce the drain on the wood pulp supply, pulpwood and labor.

The possibility of a serious shortage of chemical wood pulp is becoming so great that the members of the industry must give serious consideration to the substitution of other fibers in furnishes. It is probable that there will be insufficient pulp to produce the amount of paper required even under conditions of restricted usage. To supply these paper requirements, it may be desirable and even necessary for mills to change furnishes so that the amount of wood pulp can be reduced, and other materials such as rags, waste paper, groundwood, flax, fillers, etc., be substituted in its stead.

RAW MATERIAL CONSUMPTION

In Tons

	Actual Consumption 1940	Actual Consumption 1941	Estimate for 1942	Projected for 1943
Pulp (All Grades)	9,781,739	11,134,440	10,700,000	8,600,000
Waste Paper	4,667,502	5,936,231	5,500,000	6,000,000
Other Fibers and Fillers	1,643,567	2,010,376	2,000,000	1,900,000
	16,092,808	19,081,047	18,200,000	16,500,000
Paper and Paperboard Production	14,483,709	17,304,143	16,522,000	15,000,000

We have at present under M-241 quota production of 16,500,000 tons. Optimistic estimates of available fibers for 1943 appear to make possible paper production no higher than 15,000,000 tons. It seems as if there will have to be a squeezing down of some 1,500,000 tons of paper production. This would mean a cut from the 1942 volume for the industry as a whole of about 10%.

The tonnage will be down in 1943, not because of less demand, but because there will be insufficient raw material to make paper with. Every pound of paper that can be made, either under the quotas or because raw material is available, will probably be in demand.

The effect of the war on this industry may be much more drastic in 1943 than it was in 1942. However, the industry can face the situation with a good deal of faith and confidence, because there are indications, at least, that this war will not drag on for many years as had previously been feared.

The industry is under severe limitations and will continue so by government regulation of the amount of production, and in addition to that, it is under limitations by virtue of the scarcities and shortages of raw materials, labor, power, fuel and transportation.

Shortages of raw material will test the ingenuity of the paper manufacture in 1943 as never before. The art of substitution for good raw materials will be one of the achievements for 1943.

Maximum Price Schedules Check Excessive Rise in Papermaking Materials

By Walter R. Hicks, of Daniel M. Hicks, Inc.

The third full year of the War, our first officially, has ended and as great as is the lure to dwell on the more important developments thereof, comment will be confined to the prosaic account of the prices of papermaking raw materials in the waste category, during the year. In general it may be said that the waste paper, rag and fiber markets were as static during 1942 as the developments on which comment has to be foregone were dynamic. The restraining influences which the writer has discussed in past years have met their peer, OPA, which although guilty of occasional discrepancies, has achieved the desired results in preventing the runaway of prices which occurred in the first World War. The very few complaints heard from any quarter after the price schedules had cut their teeth is weighty evidence of their satisfactory operation. While other factors were contributary, a perusal of the market will amply demonstrate the amazing immobility of same. Amazing at least to those whose memory goes back to the zooming prices of 1917-1918. The contributary factors were, in the case of new Cotton Cuttings, the ever dwindling use of rag-content papers and the relative lack of export competition and in the case of Waste Paper, the board mill salvage campaign, about which we would like to comment later on.

Waste Paper Prices Vary Widely

To get down to fact and figures, waste paper as usual comes first. For the record we list on the following page in Table I the official price schedule covering waste paper as it stood after the several revisions, at the end of the year.

The original "ceilings" in effect in the beginning of the year, differed from the above, to some extent, but not to any material degree. Through the winter and early spring waste paper was tight and the ceilings with full commission obtained, to say nothing of the few lamentable instances when they were exceeded. Then, come June, came the normal increase

To the Industry

★ **A SALUTE** for the wartime job you are doing. You have justified the confidence of those who know the stark necessity to our very existence of pulp and paper in volume and variety.

★ **AND HELLO WITH A HANDSHAKE** to remind you that we are still of the industry at heart, though on leave of absence these days turning paper mill machinery into weapons of war—as we know you would have us.

★ When the job is done we will be with you again with all we have and in the meantime, we will help you in any way we can.

BIRD MACHINE COMPANY

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TABLE I—OPA WASTE PAPER PRICES

No. 1 Hard White Envelope Cuts, one cut	$3.37½	No. 1 White Ledger	$2.17¾
No. 1 Hard White Envelope Cuts	3.12½	No. 2 Mixed Ledger, colored	1.87½
No. 1 Hard White Shavings, unruled	2.87½	New Manila Envelope Cuttings, one cut	2.87½
No. 1 Hard White Shavings, ruled	2.50	New Manila Envelope Cuttings	2.65
Soft White Shavings, one cut	2.87½	Extra Manilas	1.85
No. 1 Soft White Shavings	2.50	Mixed Kraft, Env. & Bag Cuttings	2.75
Soft White Shavings, Misc.	2.15	Kraft Envelope Cuttings	3.25
No. 1 Fly Leaf Shavings	1.67½	Triple Sorted, No. 1 Brown Soft Kraft	2.50
No. 2 Fly Leaf Shavings	1.12½	New 100% Kraft Corrugated Cuttings	2.25
No. 1 Groundwood Fly Leaf Shavings	1.25	No. 1 Assorted Old Kraft	1.75
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	New Jute Corrugated Cuttings	.90
Mixed Colored Shavings	.75	Old Kraft Corrugated Containers	1.50
Mixed Groundwood Colored Shavings	.90	Box Board Cuttings	.72½
Overissue Magazines	1.67½	White Blank News	1.65
No. 1 Heavy Books & Magazines	1.57½	Overissue News	.85
Mixed Books	.85	No. 1 News	.75
		No. 1 Mixed Paper	.70
		Old Corrugated Containers	.82¼
		Mill Wrappers	.85

in availability of waste paper coupled with the full fruition of the paper salvage campaign and a tremendous glutting of the market in the low grades, and a resultant collapse of prices, the effect of which was felt to a considerable extent by the higher grades. By July first, mixed paper had hit the impossible price of $3.00 per ton, in the packers' books—$2.00. News dropped to $6.00-$6.50 and corrugated, $9.00. White ledgers scraped $30.00 per ton in August, and No. 1 books, $18.00. Old kraft, soft and corrugated was $30.00 per ton in August, and as an indication of the high grades position. No. 1 hard white shavings went to $50.00, with the No. 2 grade at $5.00 less. Soft shavings went as low as $40.00, Envelope cuttings, Kraft and white, held up best, going off only about $5.00 per ton at the mid-summer low point. Through the autumn all waste paper grades staged come-backs, except mixed papers. The year end found this grade at $6.00 with all the other grades at or very near the current ceilings listed above.

The comment on the salvage campaign that we would like to make is that those in charge pulled a psychological boner, and we fear, killed the chance of popular response if further need for salvage appeal arises. By calling it off in the abrupt way they did, the impression was given that it was unnecessary from the start and those cooperating felt just a little foolish. How much better it would have been if instead, a pat on the back was dished out to the public —"folks your response has been so overwhelming, so typically American, that we're swamped. Lay off until we absorb what you've furnished—and keep in readiness, we'll probably need your help again." Would not something along these lines have left a lot nicer taste?

New Cotton Cuttings

New Cuttings escaped the imposition of specific ceiling prices, it only being required that March 1942 prices not be exceeded. In this category there was no necessity of specific ceiling prices, nor is there any now when their publication has been expected for several weeks. In fact the establishment of such limits at the expected levels will serve to raise prices considerably beyond what they have been, and would have continued to be, had it not been known that ceilings were imminent. In looking at a few of the key grades we find that the $7.75-$8.00 market in the first quarter was the high level of the year for white shirt cuttings. The price for this grade worked off gradually to $6.00-$6.25 f.o.b. shipping point in late summer. Autumn found a recovery of ½c to ¾c per lb., to leave shirts at about 7c delivered at the year-end. Unbleached muslins maintained a slight margin of 15 to 25 points over shirts and followed the same course during the year. Bleached hosiery, were ¼c to ½c per lb., under shirts during the year. Blue denims opened and closed at about 6c with 5¼c the low of the year, in late summer. Fancy shirt cuttings followed the same pattern at 3½c down to 3¼c and up to about 3¾c per lb., at the year end; percales were roughly 5c down to 4½c closing at about 5¼c. With the fading of low grade cotton as a bugaboo, due to great demand and high prices 1942 saw a nice run on white threads, quite plentiful and quite cheap at the start. Buying was relatively heavy around mid-year, tapering off in late fall. The average range seems to have been about 5¼c to 5¾c per lb. delivered, with the usual discount.

The practically static market with no one going hungry is evidence of the unquestioned abilities of the consuming buyers, notwithstanding they encountered little disturbance by export. Only a fraction of pre-war tonnage went overseas. They had things pretty much their own way, and as always there was an item which could be used as a damper when packers got tight or tough. Cotton waste in 1941, threads in 1942, probably dandelion greens in 1943. Yet rags go on, and will forever, as long as rag content papers are made.

Old Rags at Ceiling Prices

Roofing, whites, overalls, were at full ceilings all year with brokers' commissions being paid most of the time. Although it only became effective, January 11, 1943 in its present form, we print the latest ceiling price schedule, covering old rags, as well as rope and strings since it substantially reflects the prices of the commodities covered during the year under review.

TABLE II—OPA PRICES ON OLD RAGS

White, No. 1—		Roofing Rags—	
Repacked	*3.80	No. 1	*1.55
Miscellaneous	*3.20	No. 2	*1.45
White, No. 2—		No. 3 (bagging)	*1.35
Repacked	*2.90	No. 4	*1.35
Miscellaneous	*2.65	No. 5A	*1.35
Third and Blues—		Old Manila Rope	5.75
Repacked	*2.20	OPA Maximum Prices.	
Miscellaneous	*1.80		

The only basic fiber grade not covered above, scrap bagging, showed the same lustreless behavior, 5¼c being the highest price paid for choice papermaking quality in late summer. 4 to 4¼c was the low level at the beginning and end of the year.

It is improbable that the story will be very much different from the above at the end of the current year unless, God willing and we all doing our utmost, this War of all Wars, be over then. Not, it goes without saying, so the 1943 story of rag and waste paper prices will be more interesting but that families here and the world over may be reunited and that mankind may resume its inherent right to love, labor, happiness and a full free life.

New Penn Paper Co. Buys Property

Hyman Kaiman, the owner and manager of the New Penn Paper Company, Pottsville, Pa., has purchased the property at 317 North Second Street from the Safe Deposit Bank.

The New Penn Paper Company has been doing business at 317 North Second Street, the property purchased, since July, 1937.

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...you can prolong the useful life of your costly plant equipment

...you can produce a consistently better, *more uniform* product

It is a well-known fact among paper experts that the quality of the paper . . . how it lasts, how it prints, how it reacts to colored inks . . . is greatly affected by the pH of the pulp. So by *automatically* controlling the pH of pulp processes, you can insure a consistently uniform product—one that lasts longer, prints better, gives greater customer satisfaction!

But equally important are the other vital savings on maintenance and operating costs that Beckman pH Control can make in your plant. By Beckman-controlling the pH of the pulp before it flows into the machine, wire corrosion is reduced, "gumming" is eliminated and waste of hard-to-get chemicals is prevented through elimination of overdoing.

Result

a *better* quality of finished product at *lower* processing and maintenance costs—*lower* chemical expense . . . a MULTIPLE saving that makes a big increase in your profit margin.

LET THE BECKMAN RESEARCH STAFF HELP YOU in the selection of the proper pH equipment and accessories to fit your particular plant problem. No obligation, of course.

The Beckman Automatic pH Indicator—the ideal instrument for modern pulp and paper mill operations. Operates directly from 115 v. AC lines (no batteries!) and will also operate standard *Recording* and *Control* instruments for fully automatic process control! Ask for Bulletin 16!

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ONLY BECKMAN EQUIPMENT HAS ALL THE MODERN pH ADVANCEMENTS

- The first portable glass electrode pH meter—transforming the glass electrode from a laboratory curiosity into a practical working tool—was a Beckman instrument. It was this development that paved the way for the great present-day advancements in pH control.
- The self-balancing electronic potentiometer circuit was another important Beckman development . . . and is still available only in Beckman equipment.
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- The first completely automatic glass electrode pH indicator, recorder and controller was pioneered by Beckman. Operating on 115 V A.C. current, this instrument made automatic process control accurate, convenient, practical . . . and is today widely used by industries in all parts of the world.
- The only High Temperature Glass Electrode available today is a Beckman development . . . perfected after a long period of research work in which an entirely new type of electrode glass was produced. Designed for continuous operation at temperatures to 100° C. (212° F.), this electrode is rapidly assuming great importance in industrial processes.
- Another important — and exclusive — Beckman development is the Beckman High pH Electrode, the only glass electrode that can be used for measuring high pH values even in the presence of sodium ions. This vital development extends the convenience and accuracy of the glass electrode to many new applications where alkaline solutions in combination with sodium ions have heretofore presented difficulties.
- A recent development of vital importance to the paper field is the Beckman "X-9" Electrode—an electrode with a ruggedness far above ANY glass electrode heretofore available. Withstands direct pressure of more than 100 pounds without damage. Its unusually thick walls resist the severe abrasion in beater tanks, flow lines, etc.

Continuous research maintains Beckman Leadership!

Beckman THE LEADING NAME IN pH

Newsprint Production For 1942 Declines Below Record Of Preceding Year

By Royal S. Kellogg, Secretary, News Print Service Bureau

The first full year of participation in total war by the United States has just closed. Canada has had over three years of it. The continent is now in completely with ever increasing tempo. Under these circumstances there is no point whatever in attempting to draw comparisons in the use of any commodity with reference to normal times. The test applied to everything and everyone is the contribution to the war effort. Anything that does not so contribute directly or indirectly will receive little consideration from all-inclusive governmental control. The basic freedoms of the democracies remain, but the spheres in which they can operate are limited.

Involvement in global war is less disastrous to the manufacturers of paper than to the producers of many other commodities. Paper in its uncounted uses is essential to a large degree in modern life in either peace or war. On the other hand, the entire plant and personnel of a paper mill are not susceptible to transformation into direct war production as are many other manufacturing enterprises. It is mostly pulp and paper—or nothing.

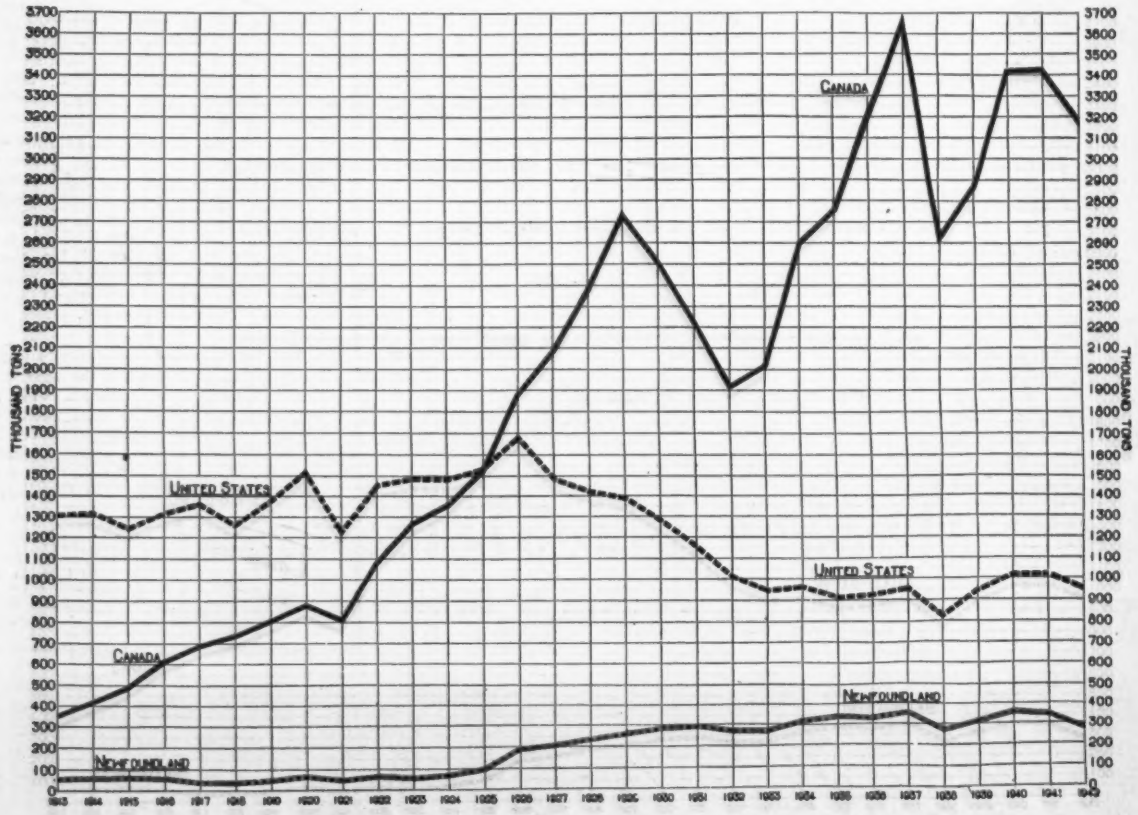
Production of all kinds of paper and paperboard in North America in 1942 was about 20,500,000 tons. This is a remarkable record for wartime. Continental newsprint production was 378,000 tons less than in the preceding year. This decrease was due chiefly to inability to reach former overseas markets. But little of the decrease was because of lessened domestic demand.

The falling off in newsprint consumption in North America was less than the reduction in the size of newspapers caused by smaller advertising volume. Obviously this was because world-shaking events kept newspaper circulations at all-time high levels.

Some of the detailed statistical information on the paper industry usually available at this time of year cannot now be obtained because of Government restrictions in Washington and Ottawa. Reliable industry sources, however, largely fill the gap. The accompanying charts tell their own story.

Production of newsprint paper in North America in 1942 was 4,407,000 tons, a decrease of 7.9% from the output in 1941. But the 1941 production was the largest in any normal year. The ten-year average production—1933 to 1942—was 4,237,000 tons, so the current record stands up well in comparison.

The continental supply of newsprint last year was,



NEWS PRINT PRODUCTION, UNITED STATES, CANADA AND NEWFOUNDLAND, 1913-1942.

Cooperating with the vital fact that War needs must come first — in supplying Restigouche Bleached Sulphite Pulp, the resources of our mill and research laboratories are maintaining the highest degree of quality and service consistent with today's conditions.

FRASER INDUSTRIES, INC.

Pulp Division: 420 LEXINGTON AVENUE, NEW YORK, N.Y.

in round numbers, made to the extent of 72% or 3,177,000 tons in Canada, 22% or 953,000 tons in the United States and 277,000 tons or 6% in Newfoundland. The decrease from the preceding year was 7% in Canada, 6% in the United States and nearly 20% in Newfoundland. The latter, of course, was the direct result of the hazards and difficulties of ocean shipping.

Canadian newsprint production in 1942 was 107% of the ten-year average, the United States production 101%, and the Newfoundland production 88%, which as previously noted, is a good record under war conditions.

The 4,407,000 tons of newsprint run off from North American machines last year was about 75% of the present generally assumed industry capacity of 5,840,000 tons yearly.

Shipments during the year exceeded production by 32,000 tons, so that mill stocks in the three countries which totaled 200,000 tons at the end of 1941 were reduced to 168,000 tons on December 31, 1942.

Overseas Shipments Sharply Off in Year

Regarding the United States, Canada and Newfoundland as an economic unit in newsprint—as they now are officially and have been for many years unofficially—a combination of industry and government reports indicates that overseas exports were 314,000 tons in 1942, a decrease of 340,000 tons or 52% from the corresponding figure of 1941. Ottawa official reports are that overseas shipments of newsprint from Canada last year were 213,000 tons, a decrease of 287,000 tons or 57% from the 500,000 tons sent abroad in 1941. Overseas shipments from Newfoundland were 83,000 tons or a decrease of 35% from the 129,000 tons so shipped in 1941. Exports from the United States, never of much consequence, were around 18,000 tons of newsprint in 1942 compared with 25,000 tons the preceding year.

Publishers Use 3.8 Per Cent Less Paper

Publishers reporting to the American Newspaper Publishers Association used 2,835,000 tons of newsprint in 1942, a decrease of 3.8% from 1941. Since there is no way of ascertaining the exact amount of newsprint used by non-A.N.P.A. publishers nor by other than publishers, it is not certain that the tonnage so used decreased the same percentage as that of the reporting publishers. Neither do we now have the United States reports of exports and imports for another check as was formerly the case. Under these circumstances, the writer estimates a consumption of 3,800,000 tons of newsprint in 1942, or 130,000 tons less than in 1941.

A consumption of 3,800,000 tons of newsprint was equivalent to 56.5 pounds per capita based upon an estimate of a population of 134,544,000 for continental United States as of July 1, 1942. This per capita of 56.5 pounds compares well with the average of 53.9 pounds for the decade 1933-42 inclusive. For those who care for the record on this subject, here it is:

Year	Population	News Print Paper Used	
		Tons	Per Capita
1933	125,770,000	2,690,000	42.6
1934	126,626,000	3,058,000	48.3
1935	127,521,000	3,300,000	51.7
1936	128,429,000	3,650,000	56.8
1937	129,257,000	3,830,000	59.3
1938	130,215,000	3,458,000	53.1
1939	130,878,000	3,550,000	54.2
1940	131,949,000	3,730,000	56.5
1941	133,212,000	3,930,000	59.0
1942	134,544,000	3,800,000(?)	56.5(?)

Circulation of Newspapers Gain

A compilation has been made by *Editor & Publisher* of the circulation of English language dailies in the United States for the twelve months ended September 30, 1942, based upon required reports to the Post Office Department in Washington.

The combined circulation of morning, evening and Sunday newspapers for that period was 78,669,000 copies. This was 12% above the 1929 record and 4% above the previous high total of 75,516,000 reported in 1941.

Circulations in each group are higher than ever before, although the largest gains are in Sunday newspapers. Morning newspapers are up 3½% from the preceding year and 18% from 1929. Evening newspapers are up 3% from 1941 and 5% from 1929, while Sunday newspapers are up 5½% from a year earlier and 31% from their circulation in 1929.

On a per capita basis there is now a copy of a daily newspaper for every 3.1 persons in the United States and a copy of a Sunday newspaper for every 3.8 persons, from babies to great-grandparents. In other words, there are more copies of daily and Sunday newspapers now published than there are families in the country. This would seem to be close to the limits of distribution and is also an indication that despite universal radio listening, newspapers are relied upon for full accounts of what is going on in a tumultuous world.

Advertising Still Unsatisfactory

Advertising is still set in an unsatisfactory groove to the manufacturers and users of paper, i.e., continued decreases in newspaper and periodical publicity and increases in the effort to build goodwill and sell commodities via the ether waves. That this effort must bring returns is evidenced by its continuation.

Periodical advertising linage in 1942 was exceedingly erratic in volume. It started off with a bang in January with an increase of 17% over January, 1941; this was followed by an increase of 5% in February and then decreases of 6% in March, 18% in April, 17% in May and 16% in June. December came out flat and the year wound up with a linage decrease of 5%—the same as in newspapers.

Newspaper advertising in 1942 was also erratic, but with not as wide swings as periodical publicity. The best month was July with 1% increase over July, 1941, while the worst months were April with a decrease of 10%, May with a 13% decrease and June with 10%—the same months in which the greatest decreases occurred in periodical advertising and apparently indicative of an especially pessimistic frame of mind of merchandisers at that time. The last five months of the year were comparatively better with decreases in newspaper advertising of only 1% in August, 2% in September, 5% in October, 1% in November, and 4% in December, thus winding up with a 5% decrease for the twelve months.

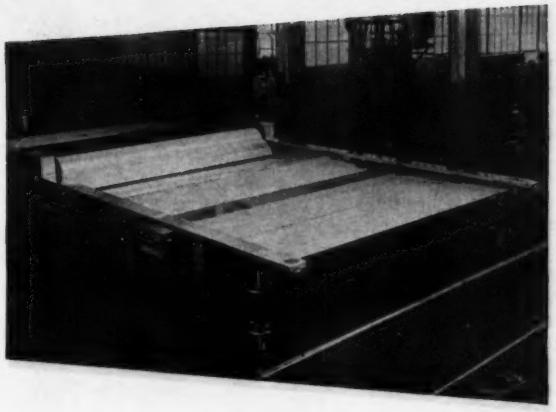
Breakdown of Newspaper Advertising

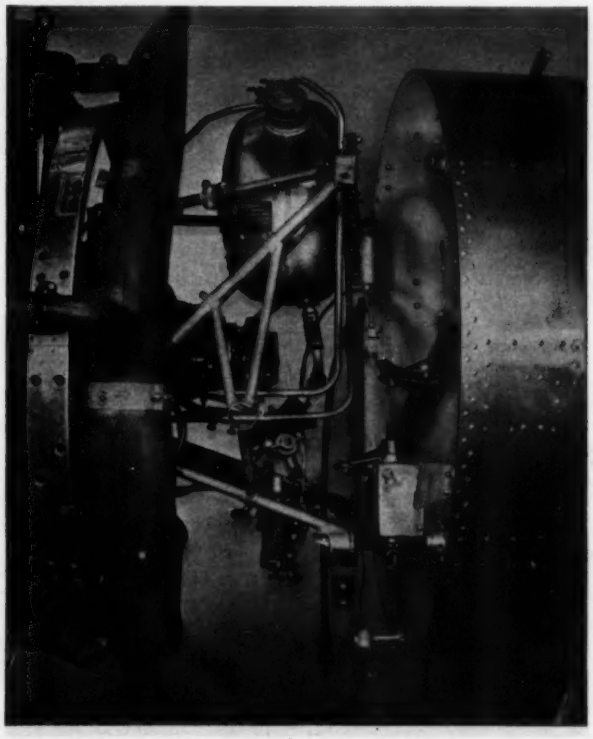
The breakdown of newspaper advertising linage by *Media Records* in 52 cities in 1942 shows losses of approximately 53% in automotive advertising, 14% in financial advertising, 6% in classified advertising, and 3% in retail advertising. Only in the general advertising classification was a gain noted, and this was little more than 1%.

The proportion of the total newspaper advertising

Yesterday

FOURDRINIER MACHINES





TODAY

FLYING MACHINES

ARMCO Stainless Steel, a hard, tough metal used in many kinds of paper mill equipment, now serves in the exhaust systems of Uncle Sam's high-powered warplanes.

Before the war "it" was a metal that many paper mill men preferred for equipment that could easily be kept clean and smooth and free from corrosion. Now this magic metal (ARMCO Stainless Steel) is at work in high-powered warplanes, taking a daily beating in red-hot exhaust stacks and collector rings — and really taking it!

When ARMCO Stainless returns from the wars it will be an even better metal for your purposes. Improved and toughened in the greatest laboratory of all, you can then mark it "1-A" on your own private priority list—for Fourdriniers, vats, flow boxes, stuff chests, flumes and other important applications.

Meanwhile, if you are so fortunate as to have ARMCO Stainless Steel equipment, see that it gets a thorough washing once a week or oftener. This will prevent excessive slime accumulation, and the hard-caking that might cause trouble. The American Rolling Mill Co., 671 Curtis St., Middletown, Ohio.

MADE OF ARMCO STAINLESS STEEL

THE AMERICAN ROLLING MILL COMPANY

space taken by these classifications last year is indicated in the following table:

	Linage	Per Cent
Retail	743,261,000	59.9
Classified	257,312,000	20.7
General	196,653,000	15.8
Automotive	26,823,000	2.2
Financial	17,623,000	1.4
Total	1,241,672,000	100.0

In every month last year radio advertising was in greater volume than in the corresponding month of any preceding year since such publicity began. The total rated value of advertising time via the four principal networks in 1942 is estimated at $115,388,000 or 8.7% more than the corresponding figure for 1941. If radio advertising via the smaller chains and stations increased in the same proportion as in the case of the leaders, the total expenditure for radio time last year must have been around $196,000,000. Taking the cost of talent and follow-up into consideration, it is probable that the entire outlay for radio publicity in 1942 approached $250,000,000, or much more than the expenditure for space in periodicals.

A breakdown of the principal classes of products advertised via the Columbia Broadcasting System last year is typical of paid radio publicity. It is as follows:

CBS NETWORK GROSS BILLINGS FOR 1942

	Dollars	Per Cent
Foods and Food Beverages	12,889,000	28
Drugs and Toilet Goods	10,302,000	23
Cigars, Cigarettes, Tobacco	6,469,000	14
Soaps and Household Supplies	5,215,000	11
Confectionery and Soft Drinks	3,197,000	7
Lubricants and Fuel	1,705,000	4
Automotive	1,197,000	3
All Other	4,619,000	10
Total	$45,593,000	100

The United States—the only large present market for newsprint paper in the world—enters 1943 with the prospect that the civilian economy will get only 33% of the production of all kinds of goods in the country compared with 45% in 1942 and 82% in 1941, and this will be true even with an industrial output more than double the 1935-1939 average.

This necessary concentration on war effort means many further price increases despite all controls—and still higher cost of living. The volume of civilian trade will be limited not by prices, but by scarcity of commodities. The economies which began in 1942 must be greatly extended in 1943. If there is any advertising at all by many firms, it will be strictly for purposes of goodwill—not because they have commodities or services to offer the public. Stores which do have things to sell will probably find no difficulty in disposing of them with a minimum of advertising because of the large number of ready buyers. An anticipated U. S. Federal expenditure of nearly 100 billion dollars in 1943 guarantees purchasing power.

Already official action has constrained the publishers to a newsprint consumption at the 1941 rate and the operating ratio of the newsprint mills has been set at 10% less than in the six months preceding March 31, 1942. These ordered reductions in consumption and production may be only an entering wedge for much greater restrictions as the war effort increases in intensity.

Newspaper fatalities in 1942 were the largest in any single year since World War I. A compilation by *Editor & Publisher* lists 68 dailies which ceased publication during the twelve months. Of these dailies 25 went on a weekly or semiweekly basis, 39 suspended permanently and 4 "for the duration."

So far as the effect upon the total consumption of newsprint paper is concerned however, these suspensions were not as bad as they sound because most of them were in the 5,000-circulation class or under. The largest was the *Evening Public Ledger* in Philadelphia the first of the year. Other fairly large papers were the Kansas City *Journal*, the New Bedford *Morning Mercury*, the Dallas *Journal*, the Austin *Tribune*, the Boise *Capital News*, and the Trenton *State Gazette*.

It is impossible at this time to make a forecast of any value as to what the total newsprint consumption in the United States will reckon up to twelve months hence. If it is a long dreary war year, consumption will necessarily go down. If, as the optimists think, a big success comes in 1943, consumption will jump soon thereafter.

The only certainties facing the newsprint manufacturer in 1943 are those of greater manufacturing costs, smaller personnel, lower operating ratios and the highest taxes of all time. If he makes any money at all, he will be lucky.

Book Paper Output Declines

C. L. Barnum, Sec., Book Paper Mfrs. Assn.

Uncoated book paper production for the year 1942 was 8.6% less than the year 1941, although from January through April 1942 production was greater than in the same months of 1941. In 1941, from May on, the industry ran at over 100% of 6 day capacity and continued at this high rate until April 1942.

At present the book paper industry is limited by WPB Order M-241, issued January 8, 1943, to 80% of the rate of operation for the base 6 months period September 1, 1941 through March 31, 1942, in addition to which the use of paper in magazines, books and commercial printing also has been limited by WPB order.

Coated book paper production has fallen off in 1942 to a greater degree than uncoated paper, production in 1942 being 40% less than in 1941. Although coated book paper production reached 100% for only one month in 1941, the monthly average for 1941 was around 85%. There has been no limitation placed on the production of coated book paper except through coating base stock being included in the limitation of production of uncoated book paper.

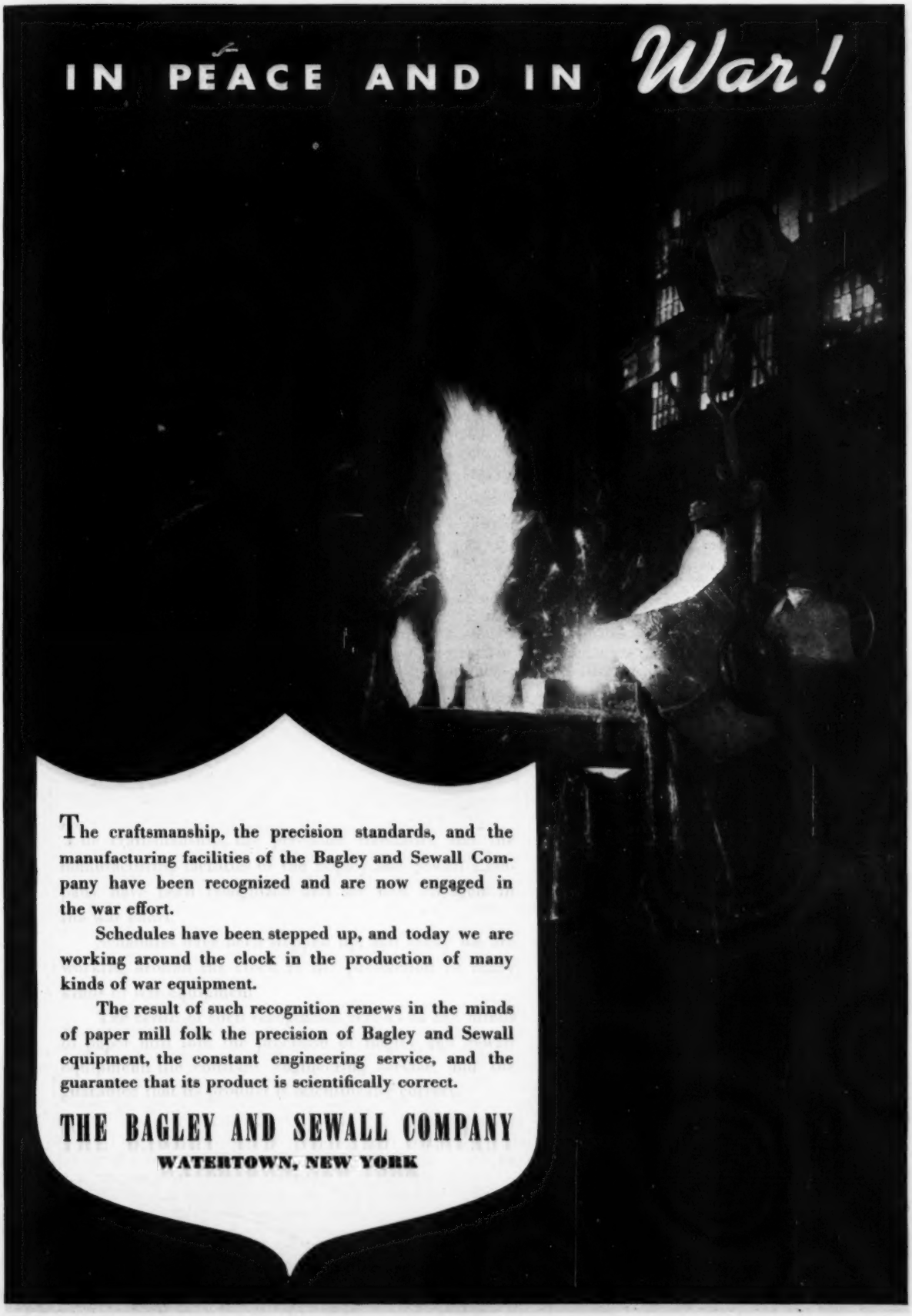
Just what 1943 will be in relation to 1942 is problematical. Governmental regulations covering raw materials, transportation and manpower, as well as direct orders dealing with curtailment of production and use, will be the factors that must be dealt with.

Schroon River Sale Set for Feb. 26

At the first meeting of creditors of the bankrupt Schroon River Pulp and Paper Company of Warrensburg today in the offices of Referee Homer J. Borst in Schenectady, N. Y., Fabian U. Rommelfanger of North Adams, Mass., acting president of the concern, was elected trustee. February 26 at 10 A.M. was set for sale of the real estate, machinery, fixtures, tools and other personal property of the bankrupt, at public auction to be held on the premises.

Assemblyman Harry A. Reoux of Warrensburg appeared as attorney for the bankrupt at the meeting, with Attorneys A. Howard Silverman of Glens Falls and Emil Peters and Milton McGuire of Schenectady appearing for creditors.

IN PEACE AND IN *War!*



The craftsmanship, the precision standards, and the manufacturing facilities of the Bagley and Sewall Company have been recognized and are now engaged in the war effort.

Schedules have been stepped up, and today we are working around the clock in the production of many kinds of war equipment.

The result of such recognition renews in the minds of paper mill folk the precision of Bagley and Sewall equipment, the constant engineering service, and the guarantee that its product is scientifically correct.

THE BAGLEY AND SEWALL COMPANY

WATERTOWN, NEW YORK

Paper Board Output in 1942 Declines 9 Per Cent Below Record Year

By Grafton Whiting, Statistician, National Paperboard Association

The paperboard industry in 1942 produced 7,150,000 tons (preliminary), which represents a decrease of 9% under the 1941 all-time high record of 7,857,500 tons. This gave an average weekly production of 148,000 in 1941 and 138,000 in 1942, but the pattern followed during each year was quite different. 1941 opened with low production, which gradually increased week by week until the peak was reached at year end. 1942 on the other hand opened with peak production during the first quarter and rapidly declined until late in the summer when improvement was experienced.

Meeting Conditions

This indicates some of the difficulties which confronted mill management in determining its operating policy to meet adequately the conditions as they arose.

First, every effort was devoted to increasing production to a level never before experienced. Then with the rapid decrease in demand in the second quarter of 1942, drastic curtailment had to be instituted, with unit costs increasing, high-priced inventories on hand, and sales prices declining. The upturn later in the year eased the strain somewhat, but curtailment orders, issued by the government in November, 1942, decreased the output which otherwise could have been made.

The statistics of the industry are such that management was forewarned of many of these changes. However, in 1942 the problems presented have not been easy to solve.

Paperboard Grades

The output of paper board mills, when analyzed by the use to which it is put, falls into two major classifications: namely, container boards and boxboards. Container boards are used by the fabricators of corrugated and solid fibre shipping containers, which are in general use for the shipment of a wide variety of products by freight, express, parcel post, etc. A further subdivision separates container board into liners or the outer-facings, straw, etc., commonly called .009 corrugating material, from which the inner fluted member is made, and chip, used for certain parts of corrugated containers and for the inner plies of solid fiber boxes.

Box boards, which are composed of a wide variety of grades, colors and finishes, are subdivided into folding carton boards, set-up, or rigid boards and other, including specialties of all kinds. To illustrate the relative importance of these divisions and subdivisions, Chart I is drawn, which shows the volume and the percentage that each bears to the yearly total during the past four years.

A review of past years shows that the relationship between the volume of container boards and box boards has not varied greatly—with container boards generally accounting for slightly more than one-half of the total. While both are used for packaging, they serve for the most part, different classes of customers, and conditions in certain years bring more demand for one type than the other. For example, in 1941 there was an upturn in the demand for shipping containers, brought about by a threat of coming shortage together with over-optimism on the part of manufacturers in gauging their future needs. This resulted in the building of inventories and threw into 1941 some of the volume which would normally be made in 1942. The influence of military requirements in 1942 caused the percentage of chip to increase from 4.4% to 5.6%. This reflects the demand for solid fiber boxes for lend-lease shipments and supplies for our own forces, the volume of which grew rapidly as the scarcity of wood, nails and metals became more pronounced. The decrease in the set-up box grades exemplifies further the shift from the output of civilian goods to military requirements and the sharp upturn in "other" grades is the result of the success on the part of the mills in their endeavor to enter new fields in the replacement of critical materials no longer available In the customary volume.

Raw Materials

The two principal raw materials entering into the production of paper board are waste papers and pulp. Papers are collected from stores, office buildings, printers, converters and homes. Pulp is produced in domestic mills and imported from Canada.

The heavy volume of production during the last half of 1941 and the first quarter of 1942 necessitated a large increase in the amount of raw materials for mill consumption. Since the first quarter the sharp decline in production caused a decrease in the requirements. This presented two problems—the waste supply and the pulp supply.

Waste Paper

The waste paper inventories during the last half of 1941 were drawn upon heavily. The record from identical mills representing a larger portion of the consumption shows an inventory of 236,000 tons held in January 1941, and but 130,000 tons in November, a decrease of 45%.

At that time the nation-wide drive to salvage waste paper began to produce results, and receipts exceeded consumption from then on. With the decrease in paper board production in the 2nd quarter of 1942, waste paper became so plentiful that the market was flooded. The mills did their share to relieve the situation by building up inventories until in September 1942 a new all-time high was established at 360,000 tons on hand, or 53% gain over January 1941, and this has been substantially maintained since then. The quarterly averages of weekly receipts, consumption, ending inventory, and average price of mixed paper, East and West combined, show the changes that took place.

WRAPPINGS AND CONTAINERS MADE MOISTURE-VAPOR RESISTANT with ECONOMICAL Cyanamid Laminating Waxes

When one thinks of moisture-vapor resistance it usually brings to mind the utilization of a coating substance to retard the penetration of moisture into wrapping or cartoning materials. But coatings that are flexible even at ordinary temperatures, low enough in cost, non-tacky, as well as providing a reasonably satisfactory resistance to moisture-vapor transfer, are not generally available at the present time.

Improved Laminating Material

While too tacky or dark in color to be satisfactory as a coating material, BENOWAX when used as a laminating substance between two or multiple surfaces of paper or board effectively prevents the transfer of moisture-vapor without impairing the flexibility of the wrapping or cartoning material.

The different grades of BENOWAX are straight amorphous petroleum waxes, unadulterated by the addition of any modifying ingredients. Available in colors ranging from amber to black, and melting points from 140° F. to 175° F., the various grades of BENOWAX afford a broad choice to suit the user's requirements.

Tests Prove Effectiveness

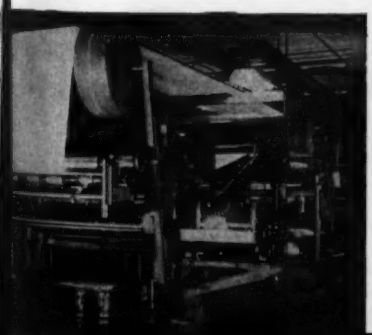
Papers laminated with the various grades of BENOWAX have been exhaustively tested by Cyanamid paper chemists and the results have been substantiated by users. This has provided data of timely interest for the manufacturer confronted with the moisture-vapor problem. Outstanding among these are the following facts concerning the characteristics of BENOWAX:

1. The moisture-vapor resistance of BENOWAX compares favorably with that of many films ordinarily considered moisture-vapor proof.
2. It provides substantial grease and oil resistance.
3. It exhibits good pliability, fair to good adhesive power, depending upon the grade.
4. Some grades protect package contents from deterioration due to light.
5. It is low in cost (a fraction of that for most materials that have been used for rendering paper moisture-vapor resistant).

Method of Using Benowax

In using BENOWAX for laminating, the material is simply heated to the proper temperature and applied to the papers or boards, which are then combined on suitable equipment. No heat curing or drying operation is required; the laminated product is merely allowed to cool.

Your Cyanamid representative will be glad to discuss these and other specific applications with you . . . make recommendations on grades of BENOWAX to meet your needs. Or, you may write:



One type of continuous laminating machine, with trimmer and sheeter, being used for laminating paper to boxboard with BENOWAX.

BENOWAX laminated wrappings and cartons enable manufacturers to step in and replace certain metals and other critical materials formerly used for many special types of product packaging. Pastry, tobacco, cereals, coffee, dehydrated foods, are among the many products effectively packaged with BENOWAX laminated stocks.

American Cyanamid & Chemical Corporation

A Unit of American Cyanamid Company

30 ROCKEFELLER PLAZA — NEW YORK 19, N. Y.

DISTRICT OFFICES: Boston, Massachusetts; Philadelphia, Pa.; Baltimore, Maryland; Cleveland, Ohio; Chicago, Illinois; Kalamazoo, Michigan; Detroit, Michigan; St. Louis, Mo.

Waxes • Rosin Sizes • Synthetic Resins
Casein • Alum • Corn Starch • Tapioca Flour • Sulphonated Oils • Fillers
Defoamers • Soda Ash • Caustic Soda
Salt Cake • Acids • Clays • Satin White
Aerosol® Wetting Agents • Calmicro® (Calcium Carbonate) and other Paper Chemicals

®Reg. U.S. Pat. Off.

	Quarterly Periods	Average Weekly Receipts	Average Weekly Consumption	Ending Inventory	Average Price Per Ton
1941	1st Quarter	63,600	64,500	217,000	$7.60
	2nd Quarter	72,300	71,600	231,700	9.60
	3rd Quarter	72,300	76,900	174,000	12.60
	4th Quarter	76,800	79,000	145,700	13.00
1942	1st Quarter	87,000	82,700	203,500	14.00
	2nd Quarter	76,400	64,400	345,000	10.70
	3rd Quarter	57,000	55,700	354,300	5.90
	4th Quarter	58,600	59,600	337,500	6.25

Paper and paper board production in 1941 amounted to 17,300,000 tons and for 1942 the estimate is 16,500,000 or a decrease of 4%. Imports from Canada and exports from the United States are not available to determine a net available supply from which collection can be made, but the small difference of 4% in domestic production indicates that there is an ample supply. There remains the labor situation in maintaining collections and the price level which will be necessary to bring in the volume required. There has recently developed irregularity in the supply of certain grades and for these, prices have increased to ceiling levels to encourage collections where necessary. The use of waste paper as a substitute for pulp will continue to increase and in spite of the large inventory every effort must be exerted to keep open the channels of collection.

Pulp Supply

The pulp supply was a problem quite different from that of waste paper. The domestic and Canadian pulp mills were faced with the necessity not only of offsetting the loss of European imports, but also of meeting the heavy increase in this country's demand. Self-contained mills producing pulp for their own use were not in danger, but converting mills formerly dependent upon European sources were threatened with a shortage. Fortunately, ample inventories were on hand at the outset and served to tide over the intervening periods necessary for mills on this continent to increase production to meet the situation.

Purchased pulp on hand as reported by identical paper and paper board mills stood at over 550,000 tons on April 1, 1940. By April 1, 1942, this had dropped to 271,000 tons. It took just a little over a half of the total inventory during these two years to augment the supply until the pulp mills could build up their production to meet the demand. From April to October 1, 1942, the amount on hand increased by 64,000 tons to 335,000 tons, only to decrease again when on December 1, it stood at 311,000 tons, due to government restriction orders, which reduced the supply below the consumption level.

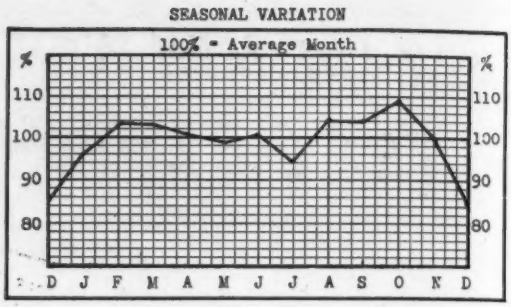


CHART II

In March 1942, government allocation of pulp was instituted. This had for one of its purposes the safeguarding of the supply for military requirements, but for most part, little change was made in the flow of pulp through regular channels until November.

An allocation order issued October 24th prohibited the movement of all grades of domestic paper pulp from the Pacific Coast to Midwestern and Eastern markets during November and December. In 1941, at least 50% of domestic sulphite and sulphate pulp sold in the United States was produced by West Coast mills. Allocation of Eastern, Lake States and Canadian pulp to domestic consumers has in part replaced this deficiency, but the result has already resulted in a reduction of inventories in the hands of the mills.

For the full twelve months of 1942 domestic shipments of all grades of pulp for the domestic markets increased .2% over that of 1941. Canadian shipments to the United States, which amount to about two-fifths of the total domestic market, were 6.4% more and, combining these figures, the amount available for the domestic market was 2.6% larger than in 1941. This has permitted the building up of the inventories already mentioned, but now restrictions have reduced the current supply below that necessary to support present consumption.

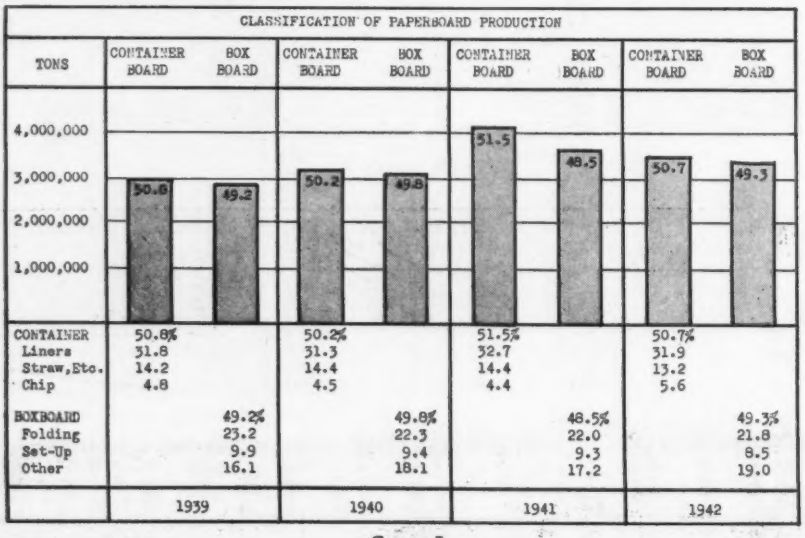


CHART I

One of the first steps taken by the paper board mills was the substitution of the better grades of waste paper stock to replace some of the pulp formerly used. No overall statistics are available covering this substitution, but the record of consumption of waste papers and pulp in some twenty typical mills dependent upon purchased pulp shows the proportions of each in their average furnish. Using the first part of 1940 as a base, a reduction of 11% in pulp used was made by the first part of 1941;

"ASK THE MEN WHO LIVE WITH THE C-E CHEMICAL RECOVERY UNIT"

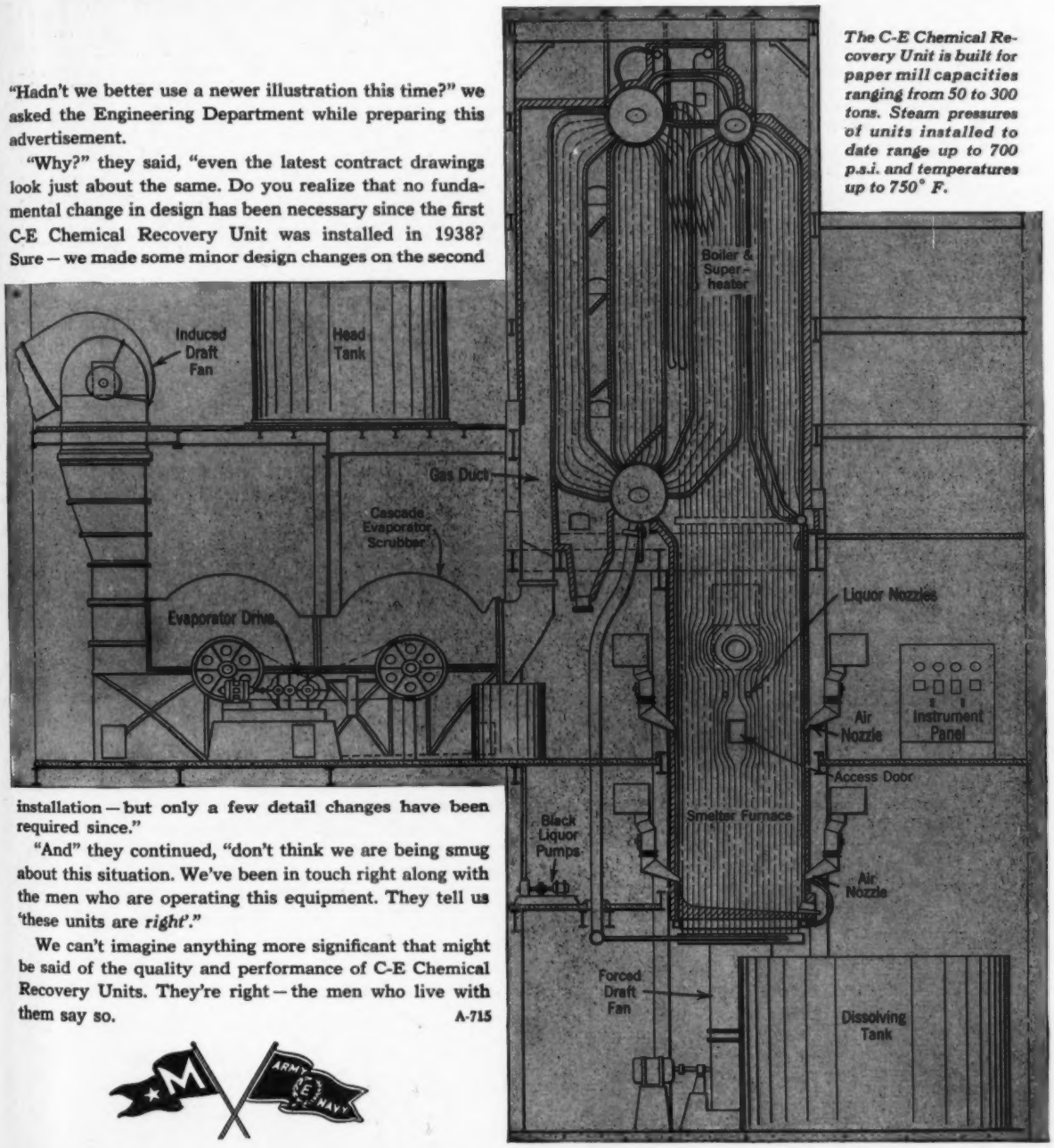
"Hadn't we better use a newer illustration this time?" we asked the Engineering Department while preparing this advertisement.

"Why?" they said, "even the latest contract drawings look just about the same. Do you realize that no fundamental change in design has been necessary since the first C-E Chemical Recovery Unit was installed in 1938? Sure — we made some minor design changes on the second installation — but only a few detail changes have been required since."

"And" they continued, "don't think we are being smug about this situation. We've been in touch right along with the men who are operating this equipment. They tell us 'these units are *right*'."

We can't imagine anything more significant that might be said of the quality and performance of C-E Chemical Recovery Units. They're right — the men who live with them say so.

A-715



The C-E Chemical Recovery Unit is built for paper mill capacities ranging from 50 to 300 tons. Steam pressures of units installed to date range up to 700 p.s.i. and temperatures up to 750° F.

COMBUSTION ENGINEERING

200 MADISON AVENUE — NEW YORK, N. Y.

at the end of 1941, it was 20% and in recent months 25%.

This change is based on averages and does not mean that any one grade has experienced this full amount, since with the war effort there is being produced more of the grade with large chip content than formerly was the case. Under the new restriction orders, it is anticipated that substitution will be further increased.

It is difficult to foresee what amount of pulp will be available during 1943. Government restrictions will undoubtedly be increased and the essentiality of use of paper and paper board will become more and more the deciding factor in its allocation.

Seasonal Variations

The demand for paper board varies during a normal year in response to requirements of fabricators of shipping containers and cartons. These fabricators, in turn, are governed by orders from their customers, many of whom cater to the spring and fall trades. These two periods of activity are found to be followed by recession in the summer and year end.

In periods of peak production, when mills are running close to capacity with a large bank of unfilled orders, such as occurred during the close of 1941 and opening of 1942, seasonal trends are obscured but re-assert themselves with the return to more normal times. The sharp decline in the second quarter of 1942 was augmented by the downward seasonal trend and conversely the improvement in the fall was seasonal in character and would have continued so with its peak in October and a lessening in November, had not a forewarning of government curtailment brought another factor into the situation.

The seasonal variations shown on Chart II is a composite of typical years, based upon mill activity, and illustrates the changes by months in consumers' requirements. Its purpose is to permit comparison with any single year and note the time and extent to which general business conditions or sudden changes of world or domestic affairs alter the flow of demand.

Percentage of Hours Operated

The percentage of hours operated, shown on Chart III, is obtained by dividing the actual hours the mills are running by 144 hours, or six days of 24 hours each. Some mills under the stress of heavy demand operate on the seventh day of the week and in consequence the percentage may rise over 100%. In 1941, the average percent was 92%, the highest ever reached and the year's performance was remarkable in that the change from month to month, barring holiday periods, showed a continuous upward trend with a variance of not more than 5 points up or down. This same trend lasted through the first quarter of 1942, but the second quarter saw a sharp decline from over 100% to below 70%. This was followed by a slow improvement which terminated in November.

It will be noted that the percentage of hours operated follows in general the line of production on Chart IV next shown. This is consistent since changes in the volume of production dictate increased or decreased running time, but the two lines are not identical since it is found that there is an average of from 3% to 5% yearly gain in the output per hour, due to improvements in plant and equipment and increased efficiency. When new machines are brought into the industry the tons per inch hour tends to go up. Likewise, when obsolete or marginal mills are withdrawn from production the averages tend to advance. But when such mills are again brought into operation, as occurred during 1941, they tend to pull down the averages; also when labor shortages develop and new and inexperienced help is employed, efficiency drops. However, the major factor is the volume of unfilled orders ahead of the machines. When the demand is strong, pressure is exerted to attain maximum output; conversely with a lack of orders, there is a tendency to slow down and lengthen out the running time.

Orders and Production

Incoming orders are contrasted with production on Chart IV, by reducing each to a percentage figure, with 100% equal to 6 days at full operation. To distinguish between periods in which orders exceed production, the intervening space is left white, while production in excess of orders is emphasized by the black area.

The significance of this display lies in the fact that following each rapid increase in orders, a reaction takes place with production greater than incoming orders; and the duration of the period of adjustment is in ratio to the extent to which the high level had

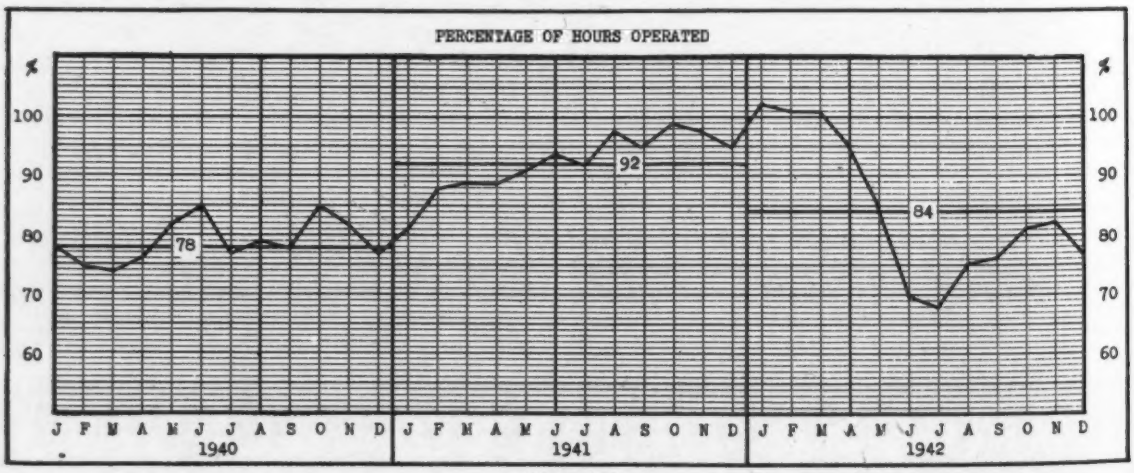
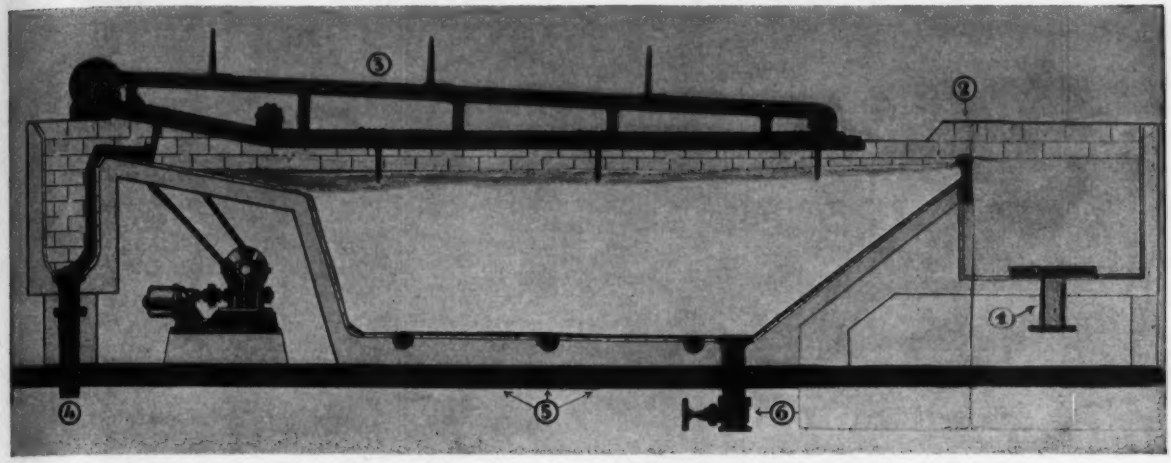


CHART III



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through use of the

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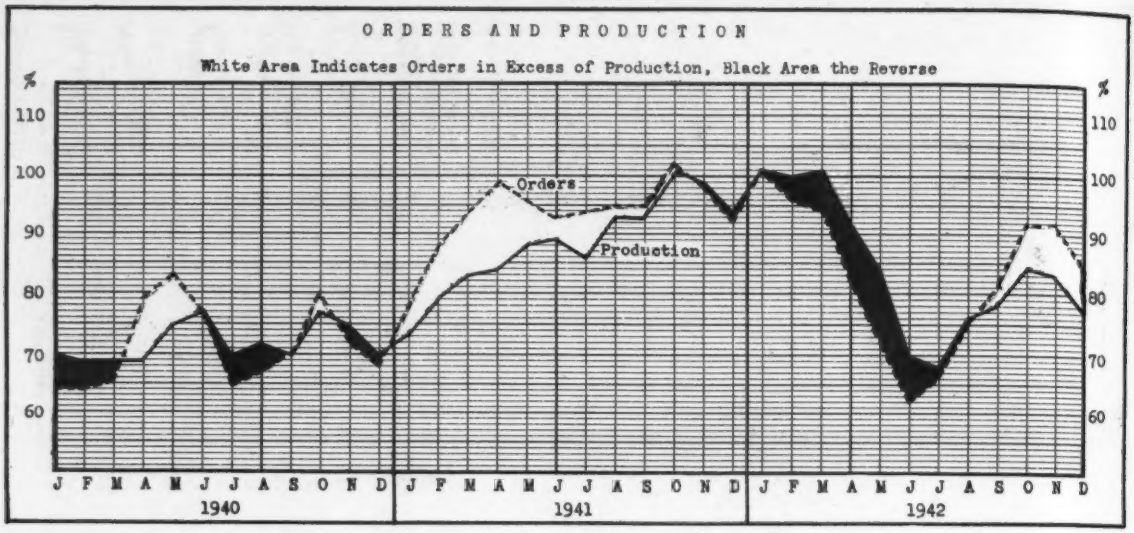
ORDERS AND PRODUCTION
White Area Indicates Orders in Excess of Production, Black Area the Reverse
%
110
100
90
80
70
60
Orders
Production
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1940
1941
1942

CHART IV

risen. Over a given period when the bank of unfilled orders reaches the level at which the movement started, the white area is offset and balanced by the black area.

1940 opened with a black area and then alternated white and black until the end of the year. 1941 carried a wide white area with mounting orders for almost the full year, until production caught up with the demand towards the close. 1942 was predominately black with production continuously in excess of orders until September, when the white area again appeared. The movement reduced to an expression of average tons per week during quarter years was as follows:

	Quarterly Periods	Average Weekly Incoming Orders	Average Weekly Production	Unfilled At End Of Quarter
1940	4th Quarter	124,900	126,000	151,700
1941	1st Quarter	148,800	134,600	337,000
	2nd Quarter	165,300	149,100	509,200
	3rd Quarter	162,300	155,200	578,400
	4th Quarter	158,800	160,100	523,100
1942	1st Quarter	161,100	167,000	442,500
	2nd Quarter	124,800	135,200	231,400
	3rd Quarter	119,900	119,300	236,200
	4th Quarter	143,100	129,900	311,900

Incoming orders rose sharply in 1941 due to a fear of a shortage of supply and of rising prices. Customers were constantly urging prompt deliveries and the mills stepped up rapidly their production schedule. To meet the emergency, 16 mills formerly held in reserve and other idle machines, making a total of 33 machines, were brought into operation at a considerable expense for re-establishment. The span of their activity was not long and by the close of the second quarter of this year, due to the sharp decrease in demand, they again ceased operations.

From a weekly average of 126,000 tons in the last quarter of 1940, the output was increased to 167,000 in the first quarter of 1942, a gain of 32½%. The sharpness of the decline which followed is seen in the average of only 119,300 tons per week in the 3rd quarter of 1942. During the last quarter of 1941 and first quarter of 1942, paper board production exceeded all previous records, with a total output for 6 months of 4,214,706 tons, compared with 3,416,832 tons in the 1940-1941 similar period. There was an average of 19 days to run which exerted heavy pressure for full operation of every machine available.

Incoming orders during the last quarter of 1942 were influenced by the government restriction program. Buyers placed orders with the mills in an endeavor to obtain a favorable position under the limited production schedule, sometimes for quantities in excess of their current requirements.

Days to Run

Orders and production as plotted on Chart IV illustrate the changes that took place, comparing the movement of each set of figures. The gain or loss between the two is the increase or decrease in the bank of unfilled orders. To judge the extent of this change, Chart V is drawn, using an expression "days to run." This is the length of time necessary, at full operation, to complete the unfilled orders on hand. During 1940, the average was 6.9 days with a variation of not more than 2.5 days above or below this average.

Starting in 1941 with a bank of unfilled orders equivalent to 6.5 days-to-run, incoming orders exceeded production until the bank stood at 21.2 days in the latter part of the year and remained at this high level for 17 weeks. In one week alone, orders received exceeded 183,000 tons and, at the top, unfilled orders stood at over 591,000 tons, which was nearly four times as large as at the start of the movement.

This cycle lasted 18 months and terminated in August with a bank of only 8 days. This was nearly twice the duration of the previous upturn that took place in 1939, when the peak reached was 15 days.

From September 1942 to the close of the year improvement took place, with December standing at 13.5 days.

An ample bank of unfilled orders is beneficial since it permits the selection of a sufficient volume of a given grade to make an economical run on the machine, and allows advance scheduling of labor and materials.

Prices

The prices of raw materials used by the industry and of its finished product are all subject to ceiling

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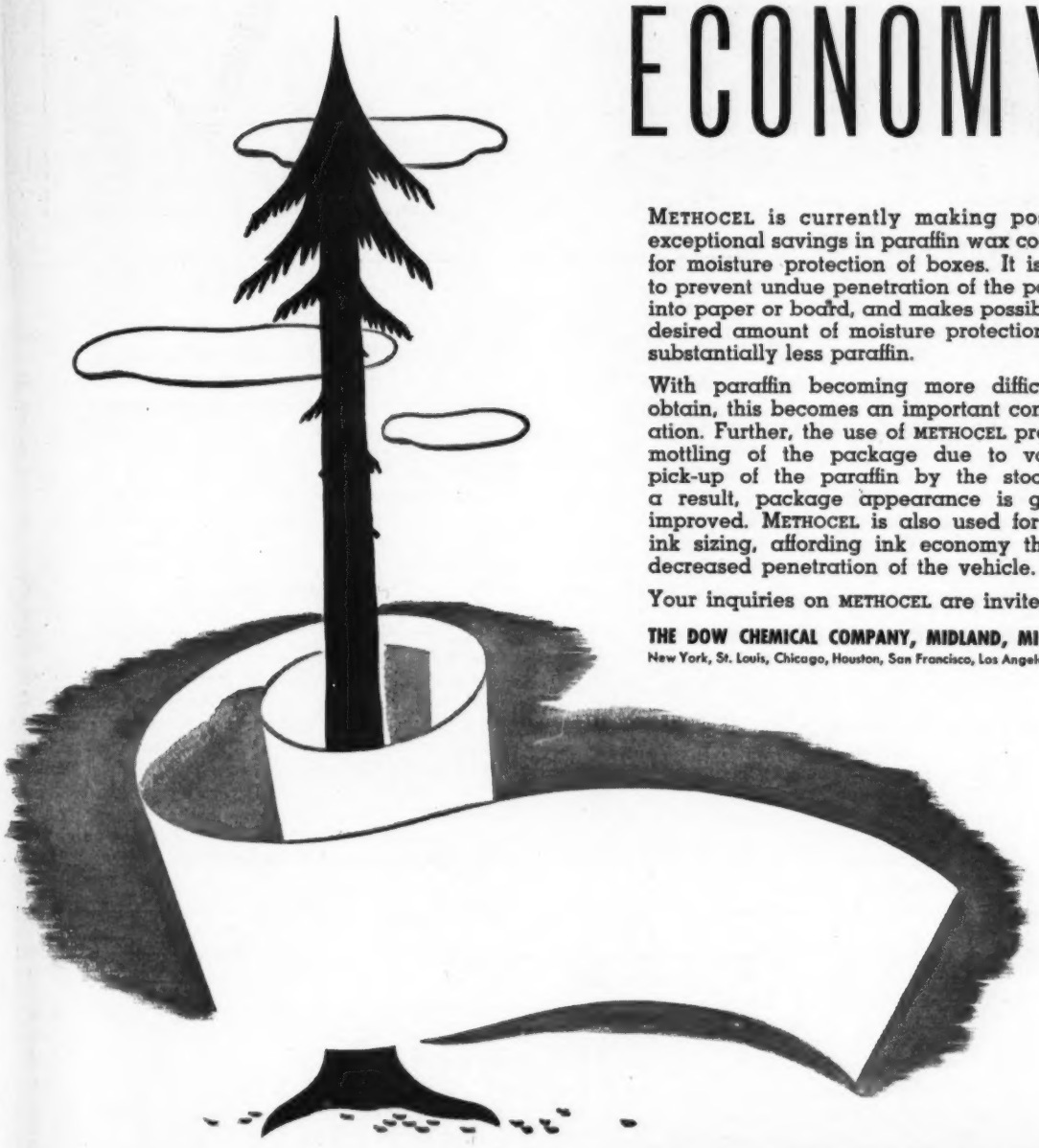

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restriction. With the exception of waste paper stock, all have been close to the ceiling levels throughout 1942. During the spring, when demand dropped off, there was a reduction of from $2.50 to $5.00 a ton in certain grades and this lower level held to the close of the year. Waste paper prices dropped during the second quarter of the year, because collections were far in excess of consumption. This situation has now changed and sharp advances have been made in waste paper prices. It is apparent that all prices will again be close to ceilings, since mill labor and material costs have increased and volume restricted.

In attempting to make a forecast of conditions in 1943, there are many factors involved, any one of which may exert a strong influence. The demand for paper board is divided roughly between civilian needs and military requirements. It is difficult to define each in terms of volume since items for both purposes are frequently made the same and in the same plants. However, it is known that the number of civilian producers that have converted their facilities into war work is continually growing. This lessening of civilian demand places the paper board mills and their customers in a position of continuous change and makes difficult a forecast of what may be expected of incoming orders, compared with past performance. Military demand is increasing rapidly, but this is a new field for most mills and the fabricators of the board.

WPB Conservation Order M-241, as amended, has as its purpose the release of labor, power, transportation and materials to promote the war effort. This will reduce the output of paper and paper board in 1943 by varying degrees for different types of product, and result on the whole in a total volume less than in 1942. Of immediate concern is the scarcity of labor for logging operations in cutting wood for the pulp mills and in certain of the pulp mills themselves in maintaining operation. Pulp is the principal raw material in paper making: it enters into the furnish of many grades of paper board; it is also the base material in the manufacture of rayon and similar products. Nitrating pulp is used in explosives. The demand may well exceed the supply before the close of the year and further restrictions beyond those now in force may have to be made. Manpower in the mills is becoming a more difficult problem with losses of men by the draft and inducements of higher pay in war production plants. The employment of inexperienced help to fill these vacancies results in decreased efficiency. Transportation is another factor that may interfere with the flow of incoming raw materials and outgoing finished product. The adequacy of ceiling prices is another item for consideration in the near future. With reduced volume, increased labor and supply costs, decreased efficiency and mounting taxes, conditions have been much changed from those in effect when the ceilings were established.

In the face of these perplexities, there is one fact that is becoming increasingly evident. The people in general and the government in particular will eventually recognize that paper and paper board are essential to the winning of the war. There may be and probably will be further restrictions designed to curtail unnecessary items, but just as soon as a scarcity appears in any real essential for the civil economy or military needs, steps will be taken to correct the situation.

As one writer has said, "We have a job to do and it might be well to bear this motto in mind—Unless it will help win the War, forget it."

Relax Order on Barred Products

WASHINGTON, D. C., February 17, 1943—Effective February 15, the list of paper products which converters had been barred from manufacturing were partially relaxed by Conservation Order M-241-a as amended by the WPB Director General for Operations. Relaxation was effected through transfer from the eliminations list (List B) to the percentage list (List A) a number of items including coasters, doilies, shirt bands, collar supports and slippers.

The order permits use of paper (including pulp and paperboard) for coasters, doilies, shirt bands, collar supports and slippers in amounts ranging from 50 to 90 per cent of the amount used in 1942. The Pulp and Paper Division pointed out that coasters, which protect furniture and linen, and shirt bands and collar supports, which substitute for pins, are made from waste paper. Doilies save linen and laundry and paper slippers are a well recognized sanitary precaution, the Pulp and Paper Division added.

The amended order also clarifies the use of the word "consume" in section (b) (2) as specifically prohibiting completion of partially processed inventories of converters.

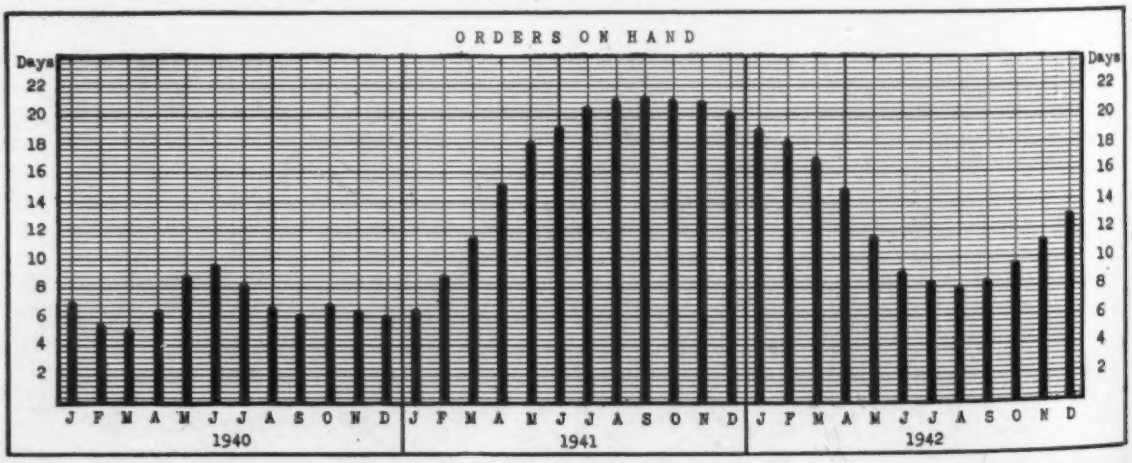

CHART V

THIS WAR IS BEING WON *by means of* ~~ON~~ PAPER!

"The Government Printing Office is now in production on Ration Book No. 3, the fourth book in a program which will use 15,000,000 pounds of the new 16-pound sulphite safety paper now being produced by 14 mills."

That's some paper!—15,000,000 pounds. Only a straw in the wind, however. Also, about 9,000,000 pounds of chemical wood manila paper for book covers. Previous jobs running up to 400,000,000 copies. Ration Book No. 2—150,000,000 copies.

Scores of other items too. Waterproof containers for export, percussion caps, army manuals, towels, shell containers, wrapping paper, mechanical drawings, war stamps and bonds, camouflage and blackout paper. . . . All of them requiring enormous quantities of paper. Totals approaching astronomical figures. The upshot of it: *paper is an absolute fundamental* in the success of our arms and all that pertains thereto. You who manufacture paper and we who furnish you with Fourdrinier wires have plenty of work to do — *and fast.*

There is no time in this country for doing anything twice because it was done wrong the first time. To turn out any product even one whit less than the very finest of which we are capable is almost criminal. That is true of both the article which is applied directly to a war purpose and the product which makes it—of both paper and Fourdrinier wires. To attain such quality, every man and every woman in every plant manufacturing wire cloth for the paper industry have an unprecedented responsibility to themselves and to the nation. We at Lindsay are endeavoring to give you a product which will show that we are conscious of our obligations.

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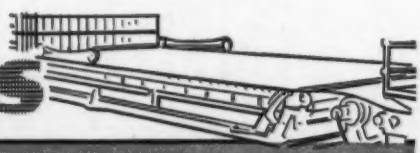

Lindsay **WIRES**

FOR PAPER MILLS

Wood Pulp Experiences a Year of Steady Demand Under Government Control

By O. F. Swanson, General Manager, Pulp and Paper Trading Co. and J. Andersen & Co.

It doubless will be recollected by those in the wood pulp producing, distributing and consuming industry that when the momentous year of 1942 started, to assume the continuity from its fateful predecessor to navigate the future through the turbulent seas of destiny, it was with the feeling that "Well, here goes, and let us hope for the best". This was a conception apparently created by the pleasing revelation of the marvelous achievements of the pulp industry in the year just ended and, too, by apprehension that 1942 could hardly duplicate the preceding year's huge dimensions or even so much as reach their proximities.

The existing skepticism for the year 1942, augmented by the recordbreaking productions of 1941, unquestionably played an important role in the formulating of opinions regarding 1942, and predictions for the new year—good, bad and indifferent—led to friendly debates and interesting discussions. While a few of these approached the borderline of pessimism, indicating occasional rough sailing ahead, the great majority revealed genuine optimism.

Thus, aspects at the beginning of 1943 concerning the present year are somewhat of the same order as prevailed a year ago for the new year starting at that time, except that the repercussions of the infamous attack on the United States at Pearl Harbor have steeled us for more concerted future actions. That this nefarious tragedy would lead to stern reprisals and dire consequences to the aggressor nations was agreed upon by all, but what effect of direct nature it would have on the wood pulp industry, no one knew, and no one was greatly concerned. Let us tackle this new and uninvited job which was forced upon us with all our might and, when this job is finished, it will be soon enough to concentrate on peaceful business again, whether it is in wood pulp or anything else. That, in my estimation, is the correct interpreation of the existing sentiment in our country and in those of our allies at the outset of 1943, and which will prevail for the duration.

Pulp Sales Steady in 1942

The year 1942 began by following the course indicated by 1941 and, while it endeavored to adjust itself to inherited problems, which were tackled and disposed of as promptly as feasible, it also gracefully accepted and vigorously combated new problems as they presented themselves, at the same time intensifying its training to cope with whatever the future might bring forth. Under the watchful eye and efficient leadership of our Government's Administration, coupled with the splendid cooperation of our Canadian neighbors and other friends, both on the North American Continent and Abroad, the wood pulp business settled down to a fairly steady pace as far as sales were concerned, and in some respects, 1942 was less eventful than any year since the outbreak of World War 1, with the modification that this applied only to pulp sellers fortunate enough to have important American and Canadian sales agencies and guaranteeing payments of accounts. Brokers and others who were less strongly fortified did not of course fare so well, inasmuch as the pulp tonnage available to them for trading was distinctly limited. Producers, on the contrary, undoubtedly experienced a trying year because of production curtailment, scarcity of pulp wood, priorities, allocations, labor shortage and increased difficulties in securing certain materials and new equipment required for the manufacture of both chemical and mechanical pulp, the effects of which were most heavily felt in bleached pulp, with the result demand for such pulp exceeded the supply throughout the entire year.

Next in popularity in this country in 1942 were leading grades of No. 1 Unbleached Sulphite, but as the year progressed improvements brought about in the lower grades by some manufacturers, both in the United States and Canada, somewhat slackened the tension existing in the unbleached field.

The demand for kraft pulp, whether southern or northern, continued active all during the year, but requisitions for so-called news grades, which moved freely for nine months of the year, slumped off in the last quarter of 1942.

Government a Stabilizing Factor

When the Office of Price Administration established maximum delivered ceiling prices on all American wood pulp, based on certain freight allowances, this regulation, in conjunction with the power previously delegated to the War Production Board by the Federal Government to control distribution by either granting or refusing consumers permission to accept deliveries of pulp tonnage applied for to the WPB, exerted a stabilizing influence on pulp sales. The mandatory Governmental ruling lowering the whiteness of Bleached Sulphite and other grades of pulp to a maximum of 74 degrees, measured by the G. E. reflectance tester, was unquestionably another step in the right direction because of resultant savings in chemicals, power and labor in each ton of pulp produced, and, at the same time, believe it or not, it had another virtue in that it prevented overbleaching, which as is well known reduces the strength of the fibre.

On the whole, all these wartime measures were instrumental in keeping the wood pulp industry on a more even keel last year than during the preceding year, and although business in pulp in 1942 did not improve by leaps and bounds, as some had expected, it most certainly did not decrease perceptibly. Canadian pulp mills were, naturally, not under the jurisdiction of the WPB and the OPA and hence not obligated to abide by the wartime regulations imposed upon United States pulp mills; nevertheless they cooperated wholeheartedly in every way and by adhering to the ceiling prices established by the OPA assisted in stabilizing the market, and besides they did not pass on freight charges exceeding those

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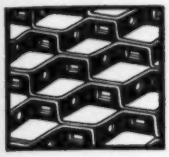


Makes stronger floors that last! Easily laid over old or new floors (concrete or wood base) and filled flush with concrete or asphalt. Exposed tops of heavy steel grid bear loads. Level non-skid surface cannot crack, rut, nor crumble. For heaviest traffic and loads! (See Alton Box Company's Klemp installation to right.)

Klemp Hexteel Installation at plant of Alton Box Co., Alton, Ill.

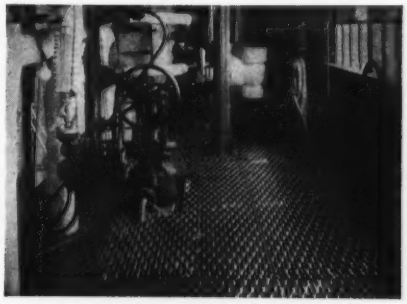
KLEMP Steel Gratings and Stair Treads

For Bridges, Decks, Catwalks, Engine Rooms, Stairs, Stair Treads, All-Purpose open flooring

Klemp WELDED: Steel bars pressure-welded on top of heavy bearing bars set edgewise. Everlasting.

Klemp DIAMOND: Riveted Type. Cutouts around columns and pipes without distortion. (See Champion Coated Paper Company's Klemp installation to right.)

Both types open to light and air.



Klemp Diamond Riveted Grating Installation at plant of Champion Coated Paper Co., Hamilton, O.

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Flexible Klemp Floorsteel quickly goes over old or new concrete or wood base, mesh filled with concrete, mastic, or asphalt. Provides close network of steel rails for trucks. Potholes, ruts and other floor defects can not develop.

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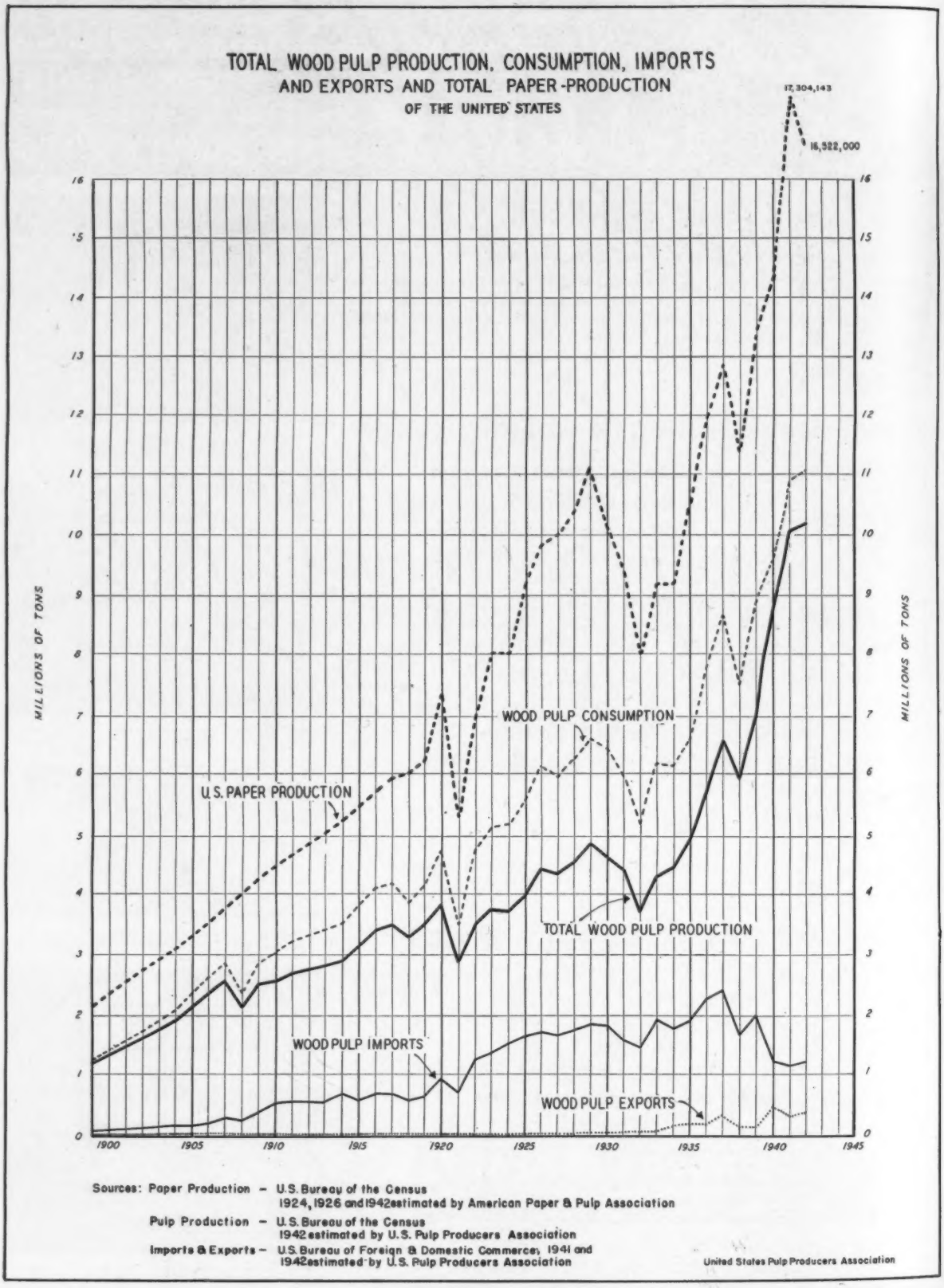
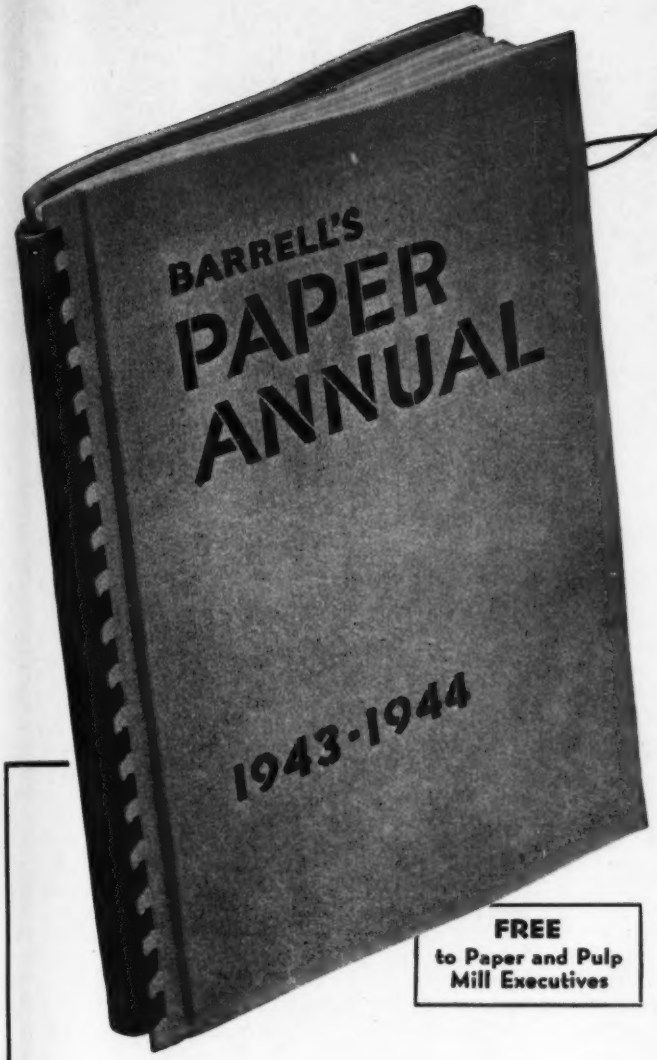

TOTAL WOOD PULP PRODUCTION, CONSUMPTION, IMPORTS
AND EXPORTS AND TOTAL PAPER-PRODUCTION
OF THE UNITED STATES
17,304,143
16,522,000
MILLIONS OF TONS
MILLIONS OF TONS
U.S. PAPER PRODUCTION
WOOD PULP CONSUMPTION
TOTAL WOOD PULP PRODUCTION
WOOD PULP IMPORTS
WOOD PULP EXPORTS
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
1900
1905
1910
1915
1920
1925
1930
1935
1940
1945
Sources: Paper Production – U.S. Bureau of the Census
1924, 1926 and 1942 estimated by American Paper & Pulp Association
Pulp Production – U.S. Bureau of the Census
1942 estimated by U.S. Pulp Producers Association
Imports & Exports – U.S. Bureau of Foreign & Domestic Commerce, 1941 and
1942 estimated by U.S. Pulp Producers Association
United States Pulp Producers Association



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stipulated by the OPA to consumers, which United States pulp mills were permitted to do.

Cooperation Within Industry Commendable

Being eager to cooperate, consumers of both pulp and paper made great efforts to adjust themselves quickly in conformity with all new conditions as they developed and, in so doing, they rendered valuable service not only to the pulp industry but to the whole country, since substantial savings were thereby effected in several products required for pulp manufacturing, including chlorine, of which there was, and still is, a distinct shortage for civilian use.

As is always the case in wartimes, new restrictions and regulations accelerate the use of dormant discoveries and inspire the search for new inventions. In this connection, the year 1942—without going into details—was no exception to the general rule. Necessity is a firm boss which compels the use of the utmost ingenuity on everybody's part, and the longer it is in the driver's seat, the more unrelentful it is. The search for substitutes of wood pulp continues to be a fond topic of technicians and manufacturers, and even statesmen have displayed interest, but, so far, has achieved no noteworthy progress. Rag stock has occupied an important position in the group of raw materials for papermaking since the very inception of paper manufacture, and probably always will do so, especially in the production of high quality papers. Waste paper, the use of which is of comparatively recent origin, has nevertheless attained a prominent place in the board division and as a matter of fact, in the entire paper manufacturing industry; ranking next to wood pulp in tonnage and importance for general usage in paper and board production.

Possibilities of Straw Pulp Considered

The manufacture of esparto and straw pulp has been known to technicians and manufacturers for practically the same length of time as wood pulp, or about 75 years. These types of pulp are considered very suitable for certain purposes and, for some reason or other, invariably command increased respect and broader attention during wartimes. Processing esparto and straw into pulp is not a complicated undertaking, and the alkaline process has been widely and successfully used, both in this and other countries, for many years. Offhand, it would seem that the expansion of straw and esparto pulp production would be feasible if concerted action could be mustered to bring this about. There is ample room for additional pulp tonnage and should the demand warrant production on a larger scale, new methods for improving the quality would follow, especially with regard to more effective ways for eliminating the joints and other undesirable parts of the straw before it is submitted to actual pulp processing.

Serious discussions have been indulged in from time to time with regard to the most efficient and economical practices for the manufacture and distribution of straw pulp on a larger scale than heretofore. Many are of the opinion that small units should be erected only in localities where the accessibility of straw predominates, whereas others favor large plants situated in vicinities of important pulp consuming centers. There is merit in both, which appear to be equally sound from certain points of view, providing the size of the countries where the mills should be built is given due consideration. What might be found advantageous in a large country such as the United States, with long freight hauls and high transportation charges, small units located in straw producing territories seem to have an edge on far way pulp mills, whether large or small. In small countries where the freight cost is of less vital consequence, the situation would be reversed. There, large pulp mills, adjacently located to the paper or board mill centers would undoubtedly have the advantage.

Wood Pulp an Important Fiber Source

Regardless of what has been and will be done with other raw materials, from which cellulose can be extracted, and, while it is dangerous to make predictions, it should be safe to say that wood pulp will retain its exalted position in the cellulose fiber field for many years to come. For how long, no one knows, but up to the present no substitute has been found to displace it, nor is there any threat of this, although waste paper, rag stock and other fibers are so extensively used that they, with the inclusion of wood pulp, comprise an indispensible unit in both the paper and board industry.

Not only is wood pulp of vital importance in the making of paper and board, but clothing, artificial silk and artificial leather, plastics and numerous other commodities are either partially or wholly made from wood pulp. Again referring to cellulose as a very satisfactory raw material, from which products for imitation leather are manufactured, trade mediums report recently that an American paper manufacturing concern has developed and patented a new process by which an excellent substitute for a certain kind of leather is made. It is reputed to compare favorably with the genuine article in tensile strength, cheapness and durability. It is also claimed that this new process excels in other respects, and that goods made by the same are amazingly strong, not only when dry, but when wet. By means of this new process, the fibers can be effectively interlocked, giving an inherent toughness throughout the sheet, independent of any conversion process with a view to increasing its strength. Consequently, it should be superior to many previous substitutes made in other countries, where they have been in vogue for some years past in the manufacture of hand bags, traveling bags, trunks, clothing, pup tents, etc. This new invention has evidently gained the distinction of being a very important addition to the already long list of varied commodities of which wood pulp constitutes the basic ingredient. Other discoveries will follow, and the value of wood pulp in our present high standard of living cannot be overestimated, nor is it possible to visualize to what extent it will be used 50 years hence. All we do know is that wood pulp and its derivatives, paper, board, etc., are indispensible products, and it is beyond any comprehension to imagine anyone bold enough, emphasizing it mildly, to try to get along without them, either in peace or wartimes. I doubt very much that it could be done at all but, in any case, I am sure that the attempt would be tough, while it lasted.

Generally, pulp mills are not easily converted into outright war production but there are exceptions, I suppose, as several are already producing the kind of pulp required by the Government, and such mills can spare very little or no tonnage for strictly civilian uses at the moment. All pulp mills and mills in af-

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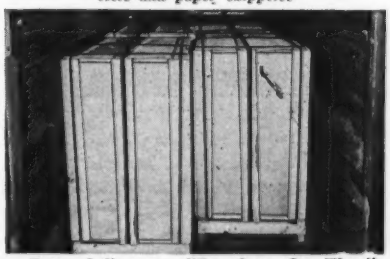

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filiated branches of the industry have well equipped machine shops where skilled mechanics are producing many necessary items required by the Army, Navy and other fighting units. According to reliable estimates, the percentage of men on war production in these shops ran high last year and, as the prospects for this year indicate an increase in manpower, a proportionate increase in the all-out war production in such shops will result.

Pulp Production Reaches High Level

According to statistics now available, the wood pulp industry on the North American Continent reached a record-breaking production during the first six months of 1942 as compared with the tonnages manufactured in the same period in any previous year. At this writing, it appears that the combined production of the United States and Canada in the entire year of 1942 was approximately 1% above that for the preceding year. Total production for the United States is put at about 10,233,000 short tons, against 10,049,000 tons in 1941, while Canadian output is estimated at about 5,515,000 short tons, against 5,599,000 tons in 1941. Thus, the wood pulp industry has done it again—exceeded the previous yearly record!

War use took a large tonnage of pulp in 1942, particularly of bleached sulphite, made on this Continent and elsewhere, and, for this reason, as already stated, the tonnage available for strictly civilian use was in some instances reduced accordingly. However, paper mills which primarily served basic civilian needs of the country, as well as contributed to the war effort directly on an important scale, received large tonnages during the year under high priorities and allocations by the WPB. Shipments of pulp to such paper and board mills are not believed to have fallen below the high mark of 1941, but instead probably exceeded the preceding year's tonnages in some cases.

Outlook for 1943 Uncertain

The wood pulp industry in general looks forward to 1943 with mixed feelings of confidence and apprehension. The trend of production at the moment is unmistakably downward, following the climb for several consecutive years, and the industry having, on the whole, moved so quickly and efficiently to meet requirements during those years, a little breathing spell might prove beneficial to the mills.

To meet the ever present urgent demand for high quality strong unbleached sulphite, a few pulp manufacturers installed additional equipment, and in other ways effected necessary improvements for the production of this type of pulp. This was, excuse the slang, a wise move on their part, from which they now are reaping benefits in more ways than one, and should continue to do so for years.

The outstanding features of a progressive pulp industry, as I have seen it grow and develop into its present greatness, are courage, plenty of patience, ingenuity, keen judgment, sound engineering, and continued persistence. I am reminded of what a great American business man is reputed to have said: "The whole idea of manufacturing is to make something that the other fellow wants, make it in the form that suits him best, just as appealing and just as attractive as you know how to make it, and then get it to him just when he wants it, when he expects it, and right when he needs it". Not bad advice.

According to estimated figures, 16 million cords of pulpwood were used in the United States last year, and 8 million cords cut in Canada, inclusive of 1½ million cords exported to the United States. If taken into consideration that approximately 1.85 cords are required for each ton of chemical pulp, and about one cord per ton of mechanical pulp, the estimated tonnage in the aggregate of chemical and mechanical pulp that was made from this cordage was in the neighborhood of 15,000,000 tons. Although this is a formidable total, bear in mind that it takes a lot of pulp to meet the North American nations' requirements, and sharp curtailments in production of several non-essential grades of paper to save wood is apt to be imposed.

Buying of "Spot" Pulp Declines

Already, curtailments in production of paper and wood pulp for civilian use have been ordered by the wartime Governments of the United States and Canada and further reductions are planned. Three pulp mills in the United States were closed down by the WPB last year, and one of the main reasons for this action was to give the lumber industry a priority on logs over pulp wood for papermaking, and it is very likely this was primarily done with a view to stepping up the war program still further. Running true to form of old customs and cherished traditions, the contract business of 1942 in pulp not only predominated, as in former years, but overwhelmed the poor "spot" business to such an extent that the latter was threatened with the same fate that overtook the American pigeon years ago. The main reason for this can undoubtedly be said to have been the greatly diminished incentive for speculation on the part of both buyers and sellers. Moreover, this improvement in tactics should in turn be credited to price-fixing by the OPA and the eagle eye on distribution by the WPB.

Early in the year, large quantities of American pulp found its way, under lend-lease, to other markets; also later in the year although on a reduced scale. The severe weather in Canada in the last months of the year had a telling effect on lowering the tonnage shipped to the United States. The freight car situation was another factor in reducing shipments, but, with improved weather conditions, pulp may become somewhat more plentiful within the near future.

Because of these shipping difficulties and other obstacles, the demand recently has exceeded the available supply of both chemical and mechanical pulp for prompt deliveries. Regardless of the weather, good grades of chemical pulp seem destined to continue scarce. Demand for all qualities during 1943 should be fairly strong, judging from present indications. Non-priority buyers, if they exist during this year, probably will find it difficult to provide themselves with pulp, yet it is doubtful that lack of pulp will close any paper mill. Supplies of lower grades will, or should be, available, and in case of need, such pulps will do for many purposes usually calling for higher qualities, which is another encouraging feature pertaining to the outlook.

Balancing Quality and Quantity a Problem

The real problem facing the wood pulp industry on this Continent at present appears to be that of balancing quality against quantity, because the day will surely come when good grades of pulp from Northern Europe will re-enter this market, and then

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it can be said "finis" to the news-grades—whether glorified or not. If my remarks in this connection seem to be a wee bit on the argumentative side, please note that the manufacture of high quality strong unbleached sulphite and strong bleachable sulphite on this Continent is still a pet subject of mine and, if I believe that my comments regarding this are accorded some considerations, I hope my opinion is not prompted by wishful thinking.

There is an old contention about the pupils outstripping their masters, and why should not this apply to pulpmaking as well. We all know that the finest qualities of pulp have been made in the United States and Canada for years, but not in sufficient tonnage to serve our consumption. Consequently, it is a question only of stepping up production. As long as we have trees, there will always be wood pulp, so it behooves us all to do all we can to protect the forests against their arch enemies—fires and destructive insects, as otherwise, the supply of pulp wood may be reduced to the point where drastic curtailment of pulp wood supply would prohibit further expansion of the wood pulp industry.

In closing, I am reminded of the beautiful poem entitled "The Tree", by Joyce Kilmer, from which I quote: "Poems are made by fools like me, but only God can make a tree".

Papermaking Chemicals Supply Adequate With Prices Stable in 1942

Written Especially for the Annual Review Number of the PAPER TRADE JOURNAL

Generally speaking, there was an adequate supply of all paper chemicals throughout the year. As we enter 1943, the principal complaint heard in the paper industry and this also applies to the suppliers of chemicals to the paper industry, is the lack of adequate help and it is thought this condition will continue and may grow to serious proportions during the current year, particularly as the paper industry is primarily a civilian one. The demand for paper continues at a pretty good rate, as this is written. However, it is difficult to get male help, while female help in the operating end of a paper mill is something new.

Blanc Fixe

Demand for blanc fixe was steady during the year. Prices on pulp remained at $40 per ton, in barrels, at works. The quotation on the powder was likewise unchanged at $60 per ton, f.o.b., works.

Bleaching Powder

War requirements for all chlorinated products were heavy during the year. Demand for bleaching powder was very active. Price fluctuations were less than in the preceding year. Quotations for 1942 ranged from a low of $2.25 to $2.50 per cwt., compared with a range of $1.90 to $3 in 1941.

Casein

The available supplies of casein in 1942 were greatly reduced. This was brought about by the cutting off of all imports by the WPB, under Regulation M-63, which was effective on July 2, 1942, and what is probably more important, the curtailed production of American casein due to the high price prevailing for all food products made from milk. Casein is at a decided disadvantage when compared with cheese and milk powder as the return is between two and three times greater for milk powder than for casein, with little likelihood that the ratio would be seriously changed in the immediate future. Casein is being sold under a price ceiling that was made effective on October 6, based upon prices at which the various products and sales were made between September 28 and October 3. This order had the effect of further curtailing production. As this is written, a new specific ceiling price is expected which will increase the price of casein several cents per pound; this to encourage production.

While no figures are available as yet for the year 1942, it has been variously estimated that American production in 1942 was between 25 and 30 million pounds.

The imports were approximately 12 million pounds, making available a supply of 37 to 42 million pounds in 1942. The consumption is normally 60 million pounds and probably reached 75 to 80 million in 1941. The consumption however, dropped in 1942 due to the low operating rate of the coated paper industry during the spring and summer months, so that it is estimated that 1942's consumption was approximately 50 million pounds.

Stocks of casein toward the close of 1942 were very low, and prices were around 21c per pound, with very little offered at this price. On the other hand, large stocks were available in the Argentine in the first of the year and it is estimated these stocks ran between 25 and 30 million pounds, at quotations of between 8 and 9 cents per pound, f.o.b., Buenos Aires. This would be the equivalent of approximately 12½ cents all charges paid, port of entry.

At the time this article is being written, all things point to a serious shortage of casein in the United States in 1943 unless imports are permitted to supplement the American production as indications are that consumption in 1943 will be higher than in 1942. The demand for the paint industry, we are told, is considerably higher due to lack of supplies of various oils such as linseed, soya bean, tungoil, and other oils used in the manufacture of paints. The demand for the glue and plastic industries, also is considerable.

Caustic Soda

Heavy demand for caustic soda to meet sharply increased war requirements the first of the year, created a temporary tight market in this chemical. Increased production soon established a relative normal supply situation. The price on solid caustic soda remained unchanged at $2.30 per cwt., in drums, car lots, at works.

China Clay

China clay prices remained firm during the entire year. English imports continued without interruption. However, the trend continued toward the purchase of a larger percentage of domestic clays, due principally to the war situation. Supplies of domestic were ample. However, the labor situation may have some effect on 1943 supplies.

Quotations on domestic filler grades ranged from $7.50 to $15 per ton; coating grades from $12 to $22 per ton, at mines. Imported clays ranged in price from $13 to $25 per long ton, ship side.

Chlorine

Government demand for chlorine continued very heavy during the year, with ships under allocation. Production was inadequate to meet all bleaching needs and the tonnage available to the pulp industry was approximately 50% under normal. The quotation on liquid chlorine was unchanged at $1.75 per cwt., in single-unit tank cars, f.o.b., works.

Rosin

Rosin size was not materially increased in price during the year. A ceiling was put on rosin size, effective in May, based upon March prices. However, in June, gum rosin was declared to be an agricultural product and therefore, not affected by the March ceiling prices on rosin. This permitted rosin to go up to a figure approaching parity which for G Rosin was approximately $3.57 Savannah price. Mills making their own rosin size, therefore, were at a disadvantage in the purchase of rosin as compared with size. The government was a large buyer of rosin for stock-pile purposes during 1942, which had the effect of keeping the market firm throughout the greater part of the year.

The quotation on "G" gum rosin on January 1, 1942 was $2.88 per cwt., in barrels, Savannah; "FF" wood rosin, $3.02 per cwt., in barrels, New York; seventy per cent gum rosin size, $3.26 per cwt., f.o.b., works. Prices on December 31, 1942 were as follows: "G" gum rosin, $3.42 per cwt., in barrels, Savannah; "FF" wood rosin, $3.40 per cwt., in barrels, New York; gum rosin, $3.63 per cwt., f.o.b. works.

The shortage of labor in the South may have a material effect on supplies of rosin during 1943, and there is always the possibility that the market price for gum rosin may advance along with any new parity price established by the Agricultural Marketing Bureau. Indications are that prices will remain quite firm throughout 1943 and for the duration of the war.

Salt Cake

Demand for salt cake continued moderate during the year. Supply was adequate for all needs. Government restrictions on chrome cake were removed in January. Quotations, unchanged during the year, were as follows: domestic salt cake, $15 per ton, in bulk; chrome cake, $16 per ton; all prices in car lots, f.o.b., shipping point. The quotation of $16 per ton on imported salt cake was nominal.

Soda Ash

All alkalies were in fair demand in 1942. Consumption was down. However, demand from government ordnance plants was heavy and took up some of the slack that occurred in the demand from paper and pulp mills. There was no change in the price structure during the past year; quotations in car lots, per cwt., were $.90 in bulk; $1.05 in paper bags, and $1.35 in barrels.

Starch

Demand for starch was moderate during the year. Prices were unchanged and as follows: pearl, $3.10; powdered, $3.20 per cwt., in bags, car lots, f.o.b., Chicago.

Sulphate of Alumina

Demand for sulphate of alumina, commercial grades, continued at a heavy rate during 1942. Production was sufficient to take care of full requirements. During the year, there was a change in specifications, brought about by the WPB changing the grade of bauxite ore used in the manufacture of alum and for a while, the trade was requested to take in a 15% alum instead of the usual 17%. However, later in the year, the WPB permitted the alum manufacturers to resume the shipment of regular alum on a month-to-month basis. There was no change in the price structure of alum during the year.

Iron free sulphate of alumina became quite scarce, as the WPB froze the stocks of aluminum hydrate and also certain grades of ore, making it necessary for the alum manufacturers to seriously curtail production. Unless conditions change, iron free sulphate of alumina will be scarce in 1943.

Quotations on the commercial grades of sulphate of alumina ranged from $1.15 to $1.25 per cwt., iron free from $1.75 to $1.85, in bags, car lots, f.o.b., works.

Sulphur

Demand for sulphur continued heavy during the year. Supplies were ample for all requirements. Prices were unchanged. Annual contracts were quoted at $16 per long ton, f.o.b., mines; spot and nearby car lots, $18 per ton.

Talc

Production of talc was adequate for the relative small requirements of the paper industry. Prices were steady and unchanged during the year. Quotations on domestic and Canadian grades ranged from $15 to $21 per ton, at mines.

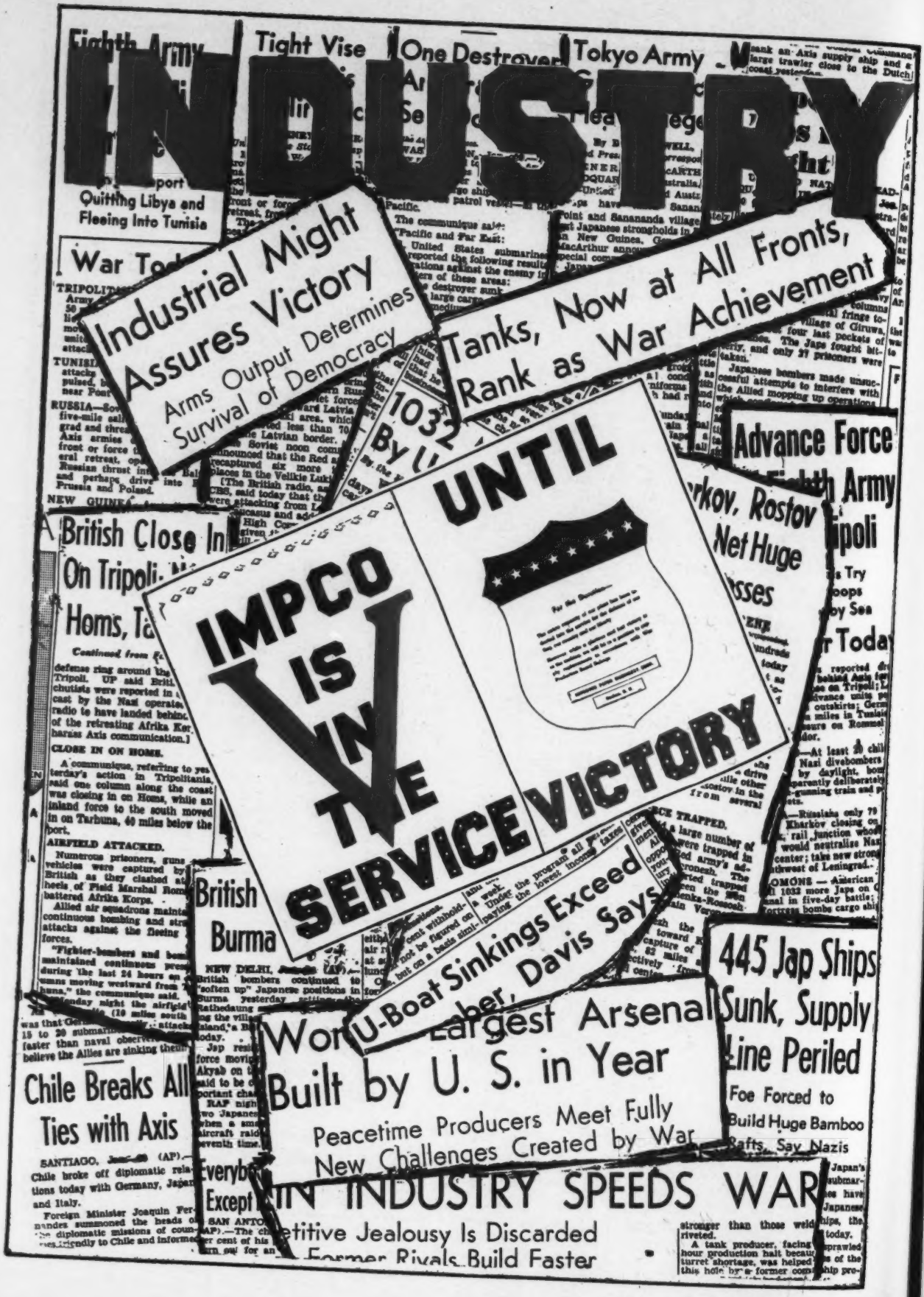
Central Ohio Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

COLUMBUS, Ohio, February 15, 1943—Re-election of O. A. Miller as chairman of the board and treasurer of the Central Ohio Paper Company, was announced following the annual meeting of the organization.

Other officers renamed included Albert M. Miller, president and assistant treasurer; F. E. Miller, vice president; R. W. Miller, vice president and secretary, and J. F. Page, vice president and assistant secretary.

In addition the following vice presidents and managers were chosen: R. C. Williams, manufacturing; H. S. Bronson, stationery department; William Jones, Cleveland division: W. H. Bancroft, Dayton division; C. E. Munz, Detroit division; A. C. Gall, Toledo division; J. L. Davis, Indianapolis division, and W. D. Lamb, Pittsburgh division.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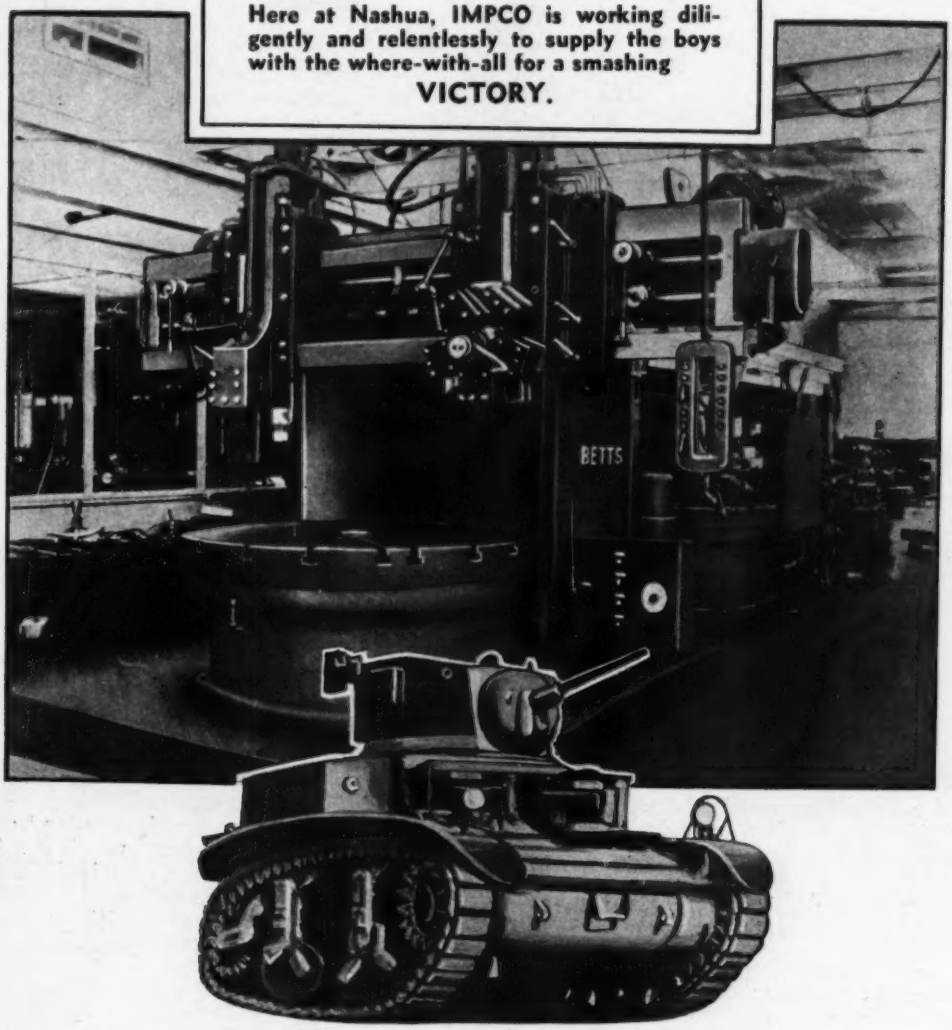

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Canada Integrates Its Paper Industry To Meet the War Emergency

By C. L. Sibley, Regular Correspondent, PAPER TRADE JOURNAL

Two dominating features in any review of the pulp and paper industry in Canada for the past year are:

1. The waging of war has been made an overriding consideration in all phases of this industry, which industry is the premier industry in the Dominion manufacturing for export and over-tops all other industries in the country in control of hydro-electric power and as a reservoir of trained man power.

2. Under orders issued by R. L. Weldon, newsprint administrator, backed by Government authority, the newsprint mills have been closely integrated as regards production, output ratings and division of profits under a plan designed to keep the whole industry solvent, despite power and labor shortages and other restrictions.

These represent the two great changes which have come over the industry during the past year. Prior to the entry of the United States into the war the greatest function of the industry from a national point of view, in aiding the war effort in which Canada had been engaged since the fall of 1939, was in maintaining its incomparable position as the leading source of United States dollars for the purchase by Canada of the war materials it required from the United States. It has truly been said that in Canada's war economy, as in times of peace, the dominant contribution of the industry to the national good was exchange, and that in that realm it had no peer.

Even during the difficult years from 1930 to 1935, in spite of disrupted conditions, the newsprint industry alone brought to Canada from foreign sources a total of $563,000,000, as compared with $475,000,000 of gold production and $130,000,000 of nickel exports. As recently as 1941 the Dominion Bureau of Statistics stated: "From the standpoint of sustaining balance of trade, products of forest origin have been more consistent than any other comparable group of commodities, and in the wood and paper group itself, the pulp and paper industry has become the chief contributor."

Foreign Exchange No Longer Dominates

After the United States became a belligerent a gradual and subtle change came over the picture, for with the two countries working as partners in a common war effort against the Axis powers, the emphasis passed from the relief which the industry has afforded as regards exchange difficulties to co-operation between the two countries in the production of the implements of war. Just how matters of trade and finance between Canada and the United States have been and are being adjusted is another story. Sufficient to say that in the past year the United States became a much larger purchaser of Canadian products than formerly; that war orders placed in this country by the United States have reached a value of nearly a billion dollars; that Canada's proven ability to produce a surplus of war materials in excess of her own needs has been responsible for her admission to full membership of the combined Production and Resources Board which has been functioning at Washington for some time for the benefit of the United Nations; that production schedules of the Allies for 1943 are being (or have been) decided at conferences at Washington; and that Canada's Minister of Munitions has intimated that there might be "important changes in Canada's war effort."

Meanwhile, as Canada passed from the stage of preparation and construction into the stage of war production from giant new industries, shortages in hydro-electric power and man power began to assume serious proportions. As has been said, the pulp and paper industry had great reservoirs of both, and the Government turned its attention to tapping these reservoirs for use where the real need, in its opinion, was greater.

The diversion of hydro-electric power from pulp and paper mills to plants manufacturing the implements of war proceeded progressively throughout the year under review, and has now reached large proportions. The first step was the diversion from the mills of power used for secondary purposes, and this involved the conversion of electric-fired boilers to coal-fired boilers. This has caused great inconvenience and expense to many mills, the conversion process costing in single mills alone in excess of $375,000,000 in certain cases. Further power was released by the shutting down of machines in various mills and by adopting a system of staggering operations whereby mills closed down completely on successive days.

Rationing and Prorating of Newsprint

Then, coincident with a rationing system for cutting down the production and consumption of newsprint, a plan was adopted by which the total amount should be produced on the most efficient basis, having regard to location of mills, capacity and distribution. In other words, a system of prorating has been put into effect. Under this system each mill is allotted a fixed proportion of the total business, based on rated capacity, orders on the books, past performance and other factors. A mill which exceeds its percentage must pay into a central pool, from which mills which cannot manufacture their quota because of war conditions will draw compensation. The plan has been worked out under direction of R. L. Weldon, newsprint administrator for the Dominion, whose order putting it into effect has the backing of a Government Order-in-Council. Mr. Weldon has control over all operations. He can tell a mill how much it can produce and how much it can ship, and can divert tonnage from one mill to another.

Orders reducing the production of newsprint, and the rationing of the supply to consumers, have been put into effect. As the orders are the result of joint agreement between bodies representing the United States and Canadian Governments, and are the same

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As research pioneers in wood cellulose, we at Brown Company are accustomed to looking into the future. We can visualize how war time developments now going on in our laboratories can benefit users of paper and paper products in business and the home.

Paper mills will be able to make better paper, thanks to new qualities imparted by Brown Company's wood pulps. Paper converters will produce more useful paper products with the new Engineered Papers. Paper merchants will have improved items to fill industrial and household needs.

The results of present Brown Company war research will do much to help paper achieve its full peace time possibilities. With this in mind we shall welcome the opportunity to discuss pulp and paper requirements with manufacturers and converters who are planning postwar products.

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in both countries, there is no need to give them in detail here. Sufficient to say, the reduction in the manufacture of newsprint thus decreed is regarded here as only a forerunner of more drastic reductions as the war proceeds.

Man Power Diversion

No figures are available as to the present and prospective diversion of hydro-electric and man power from the pulp and paper industry, but both have been considerable. Diversion of man power has often involved considerable hardships, because pulp and paper mills are largely located in isolated centers, and transfer of labor means uprooting of families from familiar surroundings, and perhaps from homes they own, and placing them in new and distant places. It also involves transfer of woodsmen from pulpwood cutting to lumbering operations. Many highly-skilled technical men have been loaned for work in war plants, and in addition the Wartime Machine Shop Board, a non-profit organization, initiated by the pulp and paper industry in 1941, has done an outstanding job in the past year in producing "bits and pieces" in its own machine shops to assist Canada's munition producing industries and in training men. While these machine shops were originally intended for maintenance work only, they are producing many essential parts. A feature of the work during the past year has been the ingenuity shown by the mills in adapting the tools they have to do jobs for which they were never intended.

The workers were not accustomed to the close tolerances demanded by army and navy specifications, while machine tools in many cases were old and worn, and were never diversified enough in many mills to assure efficient, low-cost production. Despite these obstacles, over $3,000,000 worth of vital machine parts were produced from these shops during 1942. This was achieved by the initiative and drive of the men in the machine shops who have willingly given up their accustomed leisure hours in the anxiety to help to the utmost towards winning ultimate victory.

Change Role in War Effort

These are some of the highlights of the effect of the war on the pulp and paper industry in 1942. As a matter of fact, the industry has played a much larger role in the common war effort than these particulars would indicate. This role is succinctly described in a joint statement issued here by E. Howard Smith, president of the Canadian Pulp and Paper Association, and Paul Kellogg, acting president of the Newsprint Association of Canada, as follows:

It may be instructive to try to picture the position of the Canadian pulp and paper industry in a total war such as the present. If "nothing matters now but Victory," in what way is the industry contributing to that desired end? What is its significant contribution in the national effort? We shall be as factual as possible:

1. For the needs of all the United Nations, Canada and the United States are the sole sources of pulp—the basic material for producing paper and paper products. The United States is largely occupied in supplying its internal war needs of pulp, paper and paper products, and relies on Canada for about 75% of total U. S. consumption of *newsprint* paper;—in addition, about 1 million tons of *pulp* of various kinds for making in U. S. papers and paper products. The major part of all *newsprint* paper used in England is imported from Canada. Of all *pulp* produced in Canada for sale, about 90% is exported.

2. All pulp requirements of the Canadian Government for nitration into explosives are met with pulp made in Canada, and practically all those of the British Government for this purpose.

3. All U.K. requirements of dissolving pulps for making rayon yarn, staple fibre, plastics, cellophane and allied products of essential war-need are supplied by Canada—about 60,000 tons per year in 1942. For 1943 about the same quantity will be required.

4. Pulp made in Canada is the basis for war essentials in Canada such as shell containers, packages for the distribution of parts for machines and assemblies of war equipment between munitions plants; packages for food and clothing to the armed forces; chart, map, blueprint and photographic papers; and papers for the forms and correspondence necessary to the operation of the Army, Navy, Air Force and activities supporting them.

"Good Neighbor" Policy

5. In round figures 80% of the (value) pulp and paper produced in Canada is exported, principally to United States and United Kingdom—also to Latin American countries to co-operate by special request of the Canadian and United States Governments in the "good neighbor" policy to Latin American countries sponsored by both Governments. In *newsprint* paper Canada supplies about 80% of South American needs.

6. All these export shipments have first to be licensed by the countries receiving them and can, therefore, be counted as essential war needs—otherwise the Governments of the receiving countries would not consider licensing them.

7. To relieve U. S. pulp producers as to shipments under Lease-Lend to United Kingdom, U. K. Ministry of Supply (Paper Control) reduced their pulp requirements from United States for year 1943 by about 50% as compared with 1942, relying on Canada to make up whatever shortage in United Kingdom supplies might develop despite efforts to reduce consumption of pulp in United Kingdom. During 1942 United Kingdom consumption of new pulp—as distinct from consumption of reclaimed papers—has stood at 24% of pre-war rate, and for 1943 has been squeezed down to about 21% of pre-war rate. United Kingdom total consumption of papers including newsprint, together with paper products, is but 40% of pre-war consumption.

War's Need of Industry's Products

8. Such drastic reductions in United Kingdom consumption have been accomplished while England has been fighting a "defensive" war. As the "offensive" war on which the United Nations have now embarked develops, there will be a substantially increased war need for pulp and paper, first: to maintain more widespread operations of the armed forces as to communications, the packaging of food, containers for shells and ammunition, wood pulp for nitrating into explosives, etc.; second: to re-establish some of the basic amenities of life in the occupied countries as they are liberated during the progress of the "offensive" war. Some of the first essentials in these countries as liberated will be dissemination of authentic news, the re-establishment of the interchange of communications, and the distribution of

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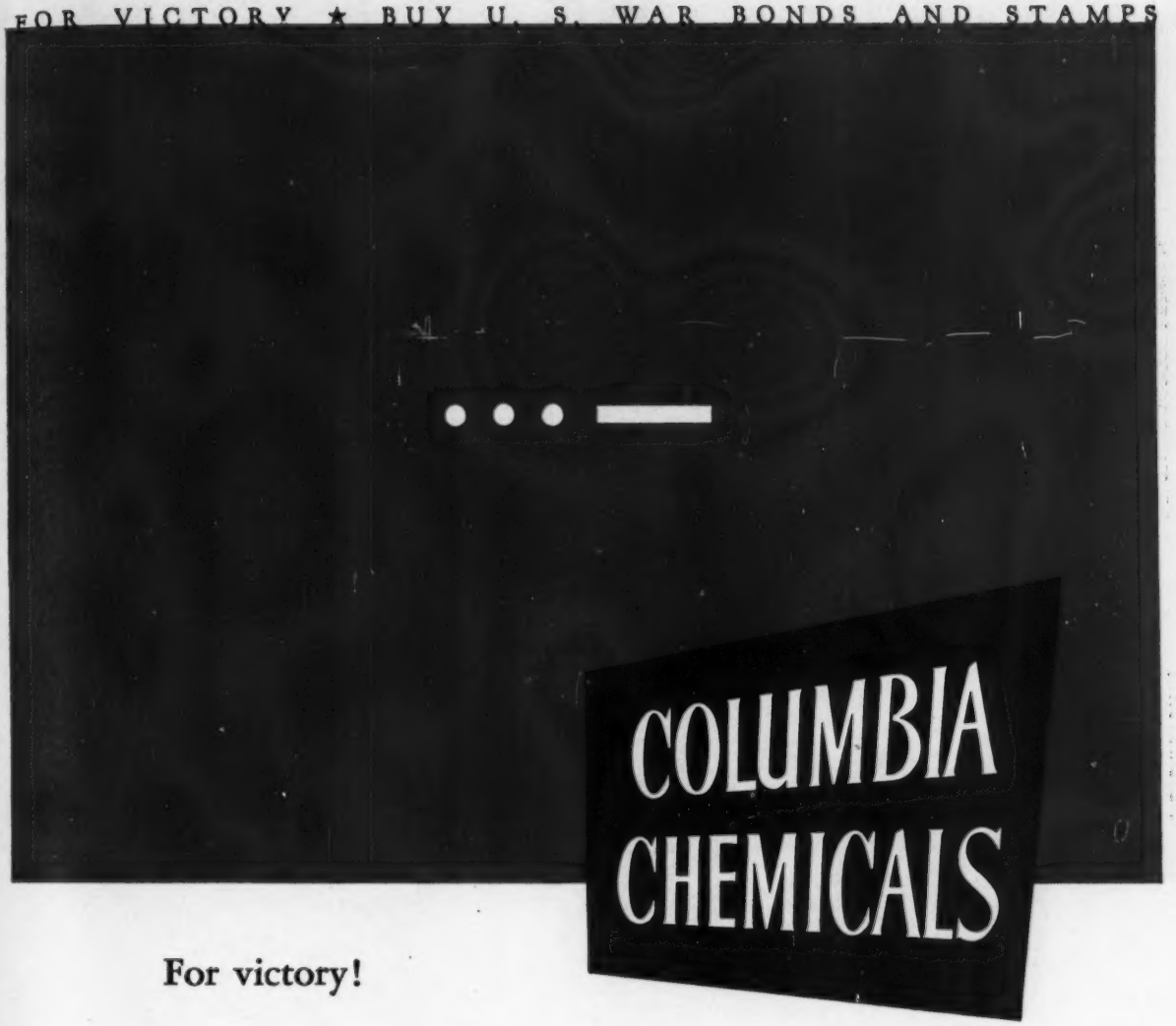

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foodstuffs and clothing. For all these, pulp, paper and paper products will be needed in large quantities and they will be needed quickly.

9. Effective November 1, the United States Government curtailed 45% of the production of pulp mills located in the Puget Sound area of West Coast United States, primarily to increase the output of lumber products of critical war essentiality that can be made only from the timber available on the West Coast, and to release manpower for the all important job of shipbuilding.

10. Before the war United States imported annually from Europe about 1½ million tons of pulp, from Canada about 700,000. Since the onset of war, at the urgent request of United States Government authorities, shipments of pulp from Canada to United States have been increased and have been running at the rate of about one million tons per year during 1941 and 1942. At the same time shipments of pulp from Canada to United Kingdom are being maintained at the rate of about 270,000 tons per year—four times the pre-war rate. Canada currently supplies 70% of total U. K. pulp consumption.

11. Obviously, the essential needs must be supplied. From time to time there may be shifting of emphasis as to what products are most needed at the moment—but this does not alter the prime necessity of maintaining capacity to produce pulp, paper, and their products to sustain the war effort of the United Nations.

Production and Shipment of Newsprint

The annual capacity of Canada's newsprint mills in 1942 was 4,340,735 tons, a slight drop from that of 1941, when it was 4,399,815 tons. The total production was 3,177,094 tons, as compared with 3,425,865 tons in 1941, a decrease of 7.3%. The production was the rate of 72.2% of capacity, as compared with 78.9% in 1941. The year started off with a production of over 84% of capacity, but dropped to a low of 65.6% in June, recovering somewhat in the fall, but dropping again in December, when production was only 244,183 tons, as compared with 300,823 tons in December, 1941. Shipments from Canadian mills in 1942 amounted to 3,208,680 tons, as compared with 3,454,665 tons in 1941, a decrease of 7.1%. The following tables, supplied by the Newsprint Association of Canada, give comparative figures as to shipments (in tons) and destination of newsprint from Canadian mills during the past five years:

TO CANADA

	1942	1941	1940	1939	1938
January	17,702	14,591	13,541	14,865	9,926
February	15,487	14,207	15,223	13,582	9,453
March	18,703	16,225	15,418	15,992	12,286
April	16,805	16,957	15,793	16,371	13,306
May	17,201	17,011	12,383	15,434	15,007
June	16,672	16,145	16,496	16,155	15,164
July	16,649	16,024	15,809	15,296	12,912
August	15,433	15,584	15,977	14,413	12,865
September	16,614	16,364	15,255	16,443	12,973
October	17,700	18,792	16,442	18,702	14,153
November	16,819	19,508	15,855	15,657	15,957
December	16,751	15,358	15,702	16,572	15,195
Total	202,536	196,766	183,894	189,482	159,197

TO UNITED STATES

	1942	1941	1940	1939	1938
January	257,476	192,144	190,096	160,657	124,439
February	227,925	185,618	164,296	140,106	115,385
March	266,034	212,727	186,788	155,642	133,933
April	209,419	226,830	196,956	177,328	157,824
May	230,496	241,437	248,229	201,503	149,642
June	225,510	231,583	253,390	173,760	141,055
July	201,756	233,159	249,252	158,770	145,318
August	222,634	230,284	232,231	168,645	162,149
September	260,859	238,949	218,989	213,219	171,756
October	268,329	247,231	213,705	220,595	198,889
November	227,736	261,611	219,524	220,469	203,646
December	212,658	268,429	220,996	203,432	176,984
Total	2,810,832	2,770,002	2,594,452	2,194,126	1,881,020

TO OVERSEAS

	1942	1941	1940	1939	1938
January	16,820	36,659	40,636	26,330	34,595
February	21,209	39,920	31,803	24,548	38,068
March	23,429	36,772	33,098	33,465	36,468
April	12,122	42,002	54,385	20,556	43,052
May	18,746	32,664	73,829	57,698	28,639
June	11,101	34,115	68,560	42,346	52,257
July	25,215	51,053	72,447	47,677	47,260
August	17,496	51,117	84,026	41,309	29,654
September	14,932	49,697	49,889	37,343	45,617
October	9,596	38,662	57,796	49,963	42,058
November	10,532	39,741	51,360	51,743	44,818
December	14,114	35,495	39,759	44,616	33,293
Total	195,312	487,897	657,588	477,594	475,779

It will be seen from these tables that while shipments to the United States increased by 40,830 tons over the total for 1941, and to Canada by 5,770 tons, there was a drop in shipments to overseas markets of no less than 292,585 tons.

The Outlook for 1943

Not since the start of the depression in 1929 has the outlook in regard to the production of newsprint been more uncertain than it is for the present year. The year has started with newsprint rationing and with a complicated and compulsory plan for the prorating of production applying to every producer. Under rationing as at present applied production has been "frozen" to 90% of the average deliveries between October, 1941, and March 31, 1942. However, this is regarded as only a start, and there is talk of the possibility of further rationing limiting the output by as much as 25 or 30% before the year is over. This will depend on developments connected with the war that cannot be foreseen.

The prorating plan is the most all-embracing scheme ever applied to any industry in Canada. Its object is not only to bring production under absolute control of the authorities, but to ensure that the hardships incidental to war shall be equally distributed among the various newsprint producers, that the steady flow of supplies to consumers shall be maintained at the highest efficiency, that possibilities of destructive competition either among consumers for supplies or among producers for available orders shall be eliminated, and that through pooling of orders and pro-rata distribution of profits, the industry, so vitally important to the whole Canadian economy, shall be preserved on a solvent basis.

How Prorating Has Been Effected

In allotting to each newsprint mill a fixed percentage of the total newsprint production, not only has the rated capacity of each mill been taken into consideration, but also the orders on the books, relative costs of production, shipments, past performances and other factors. This has resulted in a new "rated" capacity table covering individual mills, considerably changing the rated capacity figures obtaining in 1942. In this connection it may be pointed out that where part of a mill's newsprint capacity is shifted to other grades, and rated capacity thus lowered from that of 1942, consideration has been given to the fact that such a mill in effect would get a larger rather than a smaller share of the market for its production as viewed from a capacity basis.

In the working out of the prorating, consideration has also been given to the fact that circumstances might arise—such as local shortages of power, or of transportation facilities, or of labor—which would prevent certain mills from producing their full quotas. In such cases the Newsprint Administrator has the

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power to transfer tonnage to mills more favorably situated. These latter mills, in that case, would have to pay the resulting profit from the increased tonnage into the special fund to be set up, and the mills from which the tonnage was thus transferred would be entitled to draw from this fund the profit accruing from the transferred tonnage.

The whole plan has been worked out in great detail by the Newsprint Administration, in consultation with the industry's advisory committee. The percentages of total production assigned to the individual mills, together with the new "rated" capacity of each, as compared with its 1942 rated capacity, are given in the following table published by the *Financial Post*:

RATINGS OF NEWSPRINT MILLS

	1942 Rated Capacity	1943 Established Percentage	New 1943 "Rated" Capacity
Abitibi	605,000	13.01	572,440
Anglo Canadian	195,600	4.70	206,800
Bathurst (1)	18,400	0.39	17,160
Beaver	25,100	0.60	26,400
Booth, J. R. (2)	15,000	0.30	13,200
Brompton	63,600	0.93	40,920
Can. Inter. Paper	686,200	15.89	699,160
Consolidated	627,600	12.90	567,600
Donnacona	84,700	1.87	82,280
Donohue Bros.	48,800	1.07	47,080
Eddy, E. B. (3)	46,800	1.00	44,000
Great Lakes	116,300	2.76	121,440
Lake St. John	102,300	2.30	101,200
MacLaren, James	100,900	2.30	101,200
Mersey Paper	107,300	2.68	117,920
Ontario-Minnesota	185,500	4.31	189,640
Ontario Paper	162,235	4.28	188,320
Pacific Mills	74,300	1.85	81,400
Powell River	224,300	5.65	248,600
Price Bros.	374,700	8.52	374,880
Provincial	10,000	0.12	5,280
Quebec North Shore	129,780	3.32	146,080
St. Lawrence Paper	187,700	4.11	180,840
St. Raymond	7,800	0.30	13,200
Spruce Falls	199,900	4.84	212,960

Publishers' Attitude on Rationing

The start which has been made on the rationing of newsprint has been undertaken only after long consultation with newspaper publishers, both here and in the United States. The original proposals were for a much more drastic cut in consumption than has been initiated, but plain intimations have been forthcoming that more cuts may follow in the course of the year. Canadian publishers have shown themselves amenable to reasonable economies in the use of newsprint, but they resent restrictions modelled on the drastic ones now in force in Britain, which has to import all its supplies over dangerous sea routes. And they particularly resent any disposition on the part of the authorities to make the radio, rather than the newspaper, the principal medium for the dissemination of news while at the same time demands for publicity for all kinds of purposes come in a flood to newspapers from innumerable government bureaus and agencies. The attitude of the newspapers has been admirably put by the Free Press, of London, Ont., the publisher of which, Arthur R. Ford, is the president of the Canadian Press, a non-profit news-gathering association maintained by the leading newspapers of the Dominion, and comparable in scope in Canada to the Associated Press in the United States, with which it exchanges news. The Free Press had the following editorial in regard to the announcement of newsprint rationing:

"Newspapers are being rationed in the use of newsprint by the Canadian Government. The newsprint of North and South America is practically all manufactured in Canada. There is a shortage of newsprint, and in order to keep the papers operating, and in fairness to all, a cut in the newsprint consumption of about 10%, has been enforced. This applies equally to Canadian and to American papers. The Canadian papers are glad to share Canadian newsprint with their Allied colleagues.

"It is rumored now, however, that the cut is to be increased. If this is an absolute necessity, the newspapers will gladly fall in line. The papers of Canada have only one objective today—the winning of the war. They have played an important part in the building of war morale. Recruiting, Victory Loan, Red Cross, Queen's Fund, Aid to Russia, Army Week, and a score of other campaigns would not have been possible without the support of the press. They are vital in our war effort. But these campaigns, along with vital daily war news, all require space, and space requires newsprint. It is essential that the Government realize that if the newspapers are to continue to satisfy the almost innumerable demands for space made upon them by the innumerable phases of the war effort, newsprint must be made available.

"The main reason advanced for a reduction in newsprint supply is the shortage of pulpwood, owing to lack of men for the cutting of wood. This all goes back to the manpower question and the failure of the Government to face up to this problem. Experienced lumbermen have been allowed to enter the army or drift into other industries.

"The newspapers are prepared to make any reasonable sacrifice for the sake of the war effort, but the Government on its side, should take steps to meet a situation which may prove serious to an industry vital to the winning of the war."

Phases of the Industry

The year has been a difficult and strenuous one for producers of book and writing paper, paper board, and wallboard and wrapping paper, due on the one hand to the demands of war industry and governmental activities and on the other to the various controls and restrictions applying to ordinary consumption. Here again the need for conserving labor and hydro-electric power has been a complicating factor. Pulp producers have had another exceptionally busy year, due to the demands of export markets formerly supplied to a large extent by the Scandinavian countries and by the many new uses to which wood pulp is put in the manufacture of war materials.

Hydro-Electric Power Development

The development of the pulp and paper industry of Canada has been and is so closely interwoven with the development of hydro-electric power in Canada that a review of the situation here in respect to the latter is pertinent. Much of the work of harnessing of water powers has been done by pulp and paper companies, and prior to the war almost one-half of the electrical power produced in this country for industrial purposes was consumed by the pulp and paper industry. It was hydro-electric power that enabled Canada to build up the largest newsprint manufacturing industry in the world and that helped it to create those other new industries that together enabled Canada to advance from an agricultural economy to the third greatest manufacturing country in the British Empire.

During peace time an orderly development of hydro-electric power was carried out, at times in advance of actual needs. But with the outbreak of war all available power was quickly absorbed by new

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industries for the manufacture of war munitions, and the installation of additional generating equipment in plants not fully installed, together with the building of new generating stations, was undertaken with all speed. During the past year a wide program for the conservation of electric energy has also been put into effect. The pulp and paper industry had been using large blocks of power for the secondary purpose of steam generation in boilers, and this has been transferred to primary use. Continuance of daylight saving during the winter months has further helped to conserve power, as has also the prohibition of the use of electric energy for street signs and illumination of store windows. In addition such measures have been adopted as the diversion of additional water for power production at Niagara Falls, effected by agreement with the United States. So great has been the war time demand for power that in each month of the year a considerable increase in the production by central electric stations has been shown, as compared with the previous year, the total amounting to an all-time record of over 37 billions of kilowatt hours.

New water-power installations during 1942 totalled 378,600 h.p., bringing Canada's total hydraulic development to 9,225,838 h.p. Construction in progress, apart from that now in the planning stage, will add another million horsepower in the course of the next eighteen months. Regarding that in the planning stage, the most important is a project to be undertaken under an agreement between the provinces of Quebec and Ontario, just effected, by which about 400,000 h.p. will be developed at a point on the Ottawa River where the boundaries of the two provinces meet.

Among the various new developments during the past year a few of the more important may be mentioned. No less than 280,400 h.p. of the total additional of 378,600 new h.p. in Canada has been developed in the province of Quebec. The Aluminum Power Company added two units of 55,000 h.p. each to its Chute-a-Caron generating station on the Saguenay River, and brought the first two 85,000 h.p. units of its great Shipshaw development on the same stream into commission. The installation of eight similar units, now on order, and the transference of the two units from the Chute-a-Caron station to the Shipshaw plant, where the larger drop will allow generation of more power, are planned.

In the St. Maurice River Valley, center of the newsprint manufacturing industry of Canada, the Shawinigan Water and Power Company has made good progress with the installation of a 40,000 h.p. unit at Rapide Blanc generating station and one of 44,500 h.p. at the La Tuque station. These are planned for operation in July next. Three storage dams, providing reservoir capacity of 160 square-mile-feet have been constructed to further regulate the flow of the river, and the company has extended its 110,000-volt transmission system to the south shore of the St. Lawrence River, thereby materially reducing its power losses. At the head of Lake St. Louis, just above Montreal on the St. Lawrence River, the Beauharnois Light, Heat and Power Company is carrying out extensive dredging of its intake canal and enlargement of the tailrace to increase the production of its giant hydro-electric plant there. The Quebec Streams Commission, a government organization, which has built and controls 21 storage reservoirs on the rivers of the province, has, in co-operation with the Maclaren-Quebec Power Company, brought into operation a reservoir of 700-mile feet capacity on the Upper Lievre River, serving important pulp and paper mills.

In Ontario new installations totaling 66,900 h.p. came into operation during the year through the efforts of the Ontario Hydro-Electric Commission, which generates 75% of the power produced in the province. The most important new installation was one of 56,000 h.p. on the Madawaska River. This entailed the creation of a dam on the upper reaches of the river impounding 300,000 acre-feet of water. The Commission is also proceeding with the construction of a new plant at DeCew Falls, which draws water from the Welland Ship Canal. This will have an initial installation of one unit of 65,000 h.p., and is expected to be brought into operation this year. Active construction work was also continued on the Ogoki River diversion, which will carry a large body of water now flowing into Hudson's Bay into the St. Lawrence waterway, via the Nipigon River emptying into Lake Superior. This will be available for power generation on the Nipigon River, and will increase the amount of water available for power at Niagara and the St. Lawrence River. Another considerable undertaking was that of the Great Lakes Power Company, which added a 10,900 h.p. unit to one of its plants on the Montreal River, and brought it into operation last August. Other developments of lesser importance have taken place in each of the remaining provinces.

Industry Cooperates in Lumber Output

The question of lumber supply during the past year has been bound up much more intimately than usual with the pulp and paper industry. Many of the bigger companies are themselves large producers of sawn lumber in normal times, but lumber has now become a much more important factor, owing to war demands in Canada, the United States and Great Britain. As a result a scheme of co-operation with pulp and paper producers has been part of the national war plan. Logs are being diverted from pulp mills to the saw mills, and pulpwood producing camps are being switched to output of sawlogs for lumber. In addition, export of logs from the Pacific Coast area to pulp and paper mills in United States west coast areas is being drastically restricted, while export of fir logs is prohibited as a war measure. The use of lumber and timber for commercial, industrial, railway and municipal purposes is also being rigidly restricted, and control is imposed on purchases by government services.

Despite all this, difficulty is being experienced in supplying a sufficient volume to meet all demands for lumber, and at the present time the lumber industry from coast to coast is straining all its resources of labor, equipment and organization to meet unprecedented wartime demands from Britain, the United States and other countries, as well as the Dominion. While there is no shortage of raw material, there is definitely a shortage of the necessary labor forces and handling organizations to tap the unlimited forest resources of the country, and get the lumber in the form required to the places where the war needs originate. Therefore, both from pressure of circumstances and by official action the industry has been allotted a vital role and a major place in the front rank of those engaged in meeting the national emergency. It is officially classified as an essential war industry.

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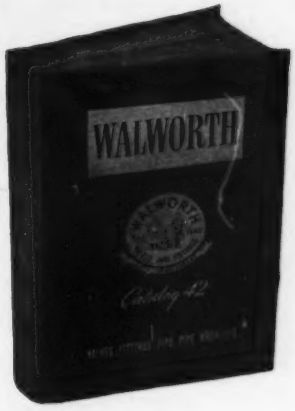

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Pulp and Paper Industry Makes Impressive Record in Meeting War Demands

By Stillman Taylor, Associate Editor, PAPER TRADE JOURNAL

Paper in numerous forms is essential in war and in peace. Paper, unlike steel, cannot be formed into guns and bullets. But it is obvious that many other products in addition to steel, copper, aluminum, rubber and other materials, are vitally needed in war and in peace. It seems unnecessary to question the essential nature of paper. It is used so constantly and so extensively by everyone that paper in some form has become a part of every day living and is utilized in all business transactions. Paper must, in fact, be used in large quantities in the present war before guns and bullets, battleships and airplanes can be manufactured. Designs and blueprints, orders for production of materials and parts must necessarily precede the manufacture of military goods of all kinds. Paper as an essential industry is, therefore, easily demonstrated. The most direct manner of doing this is by presenting the important contributions which the paper industry has made and continues to make in the war effort. Even a casual reading of the accomplishments of the paper industry in the successful conduct of the war plainly indicates that the essential character of paper is very firmly established in the national economy.

U. S. Paper Requirements Heavy

In the writing paper division, for example, this class of paper is used for planning war production, making military plans and charts, and for the issuance of orders and supplies of all kinds. So largely has paper contributed to the war that in the first six months of 1942, at least 42% of the entire domestic production of rag content writing paper was purchased by the Government and its agencies. Taking the production and government requirement figures for only the first six months of 1942, as an example, we have on competent authority that, of an estimated production of bond and writing papers totaling 33,500 tons, the Government purchased 32%; of 7,000 tons of ledgers, 22%; of 3,500 tons of manifold paper, 51%; of 4,000 tons of index, 45%; of 1,400 tons of papeterie and weddings, 12%; of 11,500 tons of blueprint, 80%; of all others; excepting air-dried, amounting to 7,700 tons, 50%; the entire domestic output for the first half of last year was required by the U. S. Government.

Government purchases of sulphite writing papers for the like period, with a total estimated production of 380,000 tons, indicate that the all-over requirements of the Government were 12% of the output, with about 80% of this tonnage in blueprint paper, 33% of it mimeograph, 24% manifold, while bonds and ledgers represented 10%. An analysis of this tonnage in the same half-yearly period shows that war work of the Government and its agencies required 60% of the total per cent of normal capacity production of rag content papers and 25% of total sulphite. War work in the civilian industries required 20% of the total rag content papers and 35% of the sulphite. The essential and non-essential civilian or trade supply was 20% of the rag content total and 40% of the total sulphite production. Requirements for the second half of 1942 increased the percentage of rag content papers going to the Government to more than 25% of the total annual production, and 60% of the total production of sulphite writing papers.

The heavy demands of the war for such critical metals as steel, and especially for tin, created urgent need for non-essential war materials to conserve these vital war metals and to replace them through the use of less important materials for packing and shipping both military goods and products for civilian consumption. The abundant supply of pulp and paper, its relatively low cost and its adaptability for fabricating in many special forms, resulted in extensive research and experimentation with paper as a wartime packaging material.

Essential Nature of Paper Exhibited

Paper as an essential product was very successfully and practically demonstrated in the paper packaging exhibit held in connection with the annual fall meeting of the Technical Association of the Pulp and Paper Industry, held at Boston last year. At the annual convention of TAPPI at the Commodore Hotel, February 15-18, 1943, the exhibit of packages and containers again showed how the wide utility of paper can be developed to meet wartime needs. Paper has gone to war in many forms. The amount of frozen foods required by the armed forces for 1943 has been estimated by the War Production Board at approximately 73,000,000 pounds. To package this class of product special paper packages were and are still being developed. The extensive government dehydration program also makes heavy demand upon the paper industry for suitable packaging material.

Paper for Packaging Chemicals

Another important use of paper was required to meet the war time demands of the chemical industry. Shortages of steel drums, tin cans and all metal containers, created difficult problems. Many chemicals are highly essential war materials and as some are explosive, inflammable, poisonous and corrosive, special paper packages had to be manufactured to safely transport them. According to one large chemical concern, fiber drums, water-proofed and otherwise specially treated, are being utilized as alternate containers for a great many chemical products. Cynide, for example, is now being safely shipped in fiber drums; dry dyestuffs, arsenate of lead and insecticide powders are now shipped in fiber containers, and some of the dry colors are now packaged in cylindrical fiber ice-cream containers. Black powder, for military and blasting uses, is soon to be shipped in a special pulpboard drum, water-proofed to meet this special requirement. It is also expected that dinitrotoluene, or DNT, now being shipped in slack

★

The Army-Navy Production Award "E" flag flies at Hammermill, earned by "high achievement in the production of war equipment"—specifically for the production and delivery of paper. Every man and woman at Hammermill proudly wears the "E" pin as an emblem of earnest contribution to our nation's war effort.

★

PAPER *IS* WAR MATERIAL

At an Eastern port, a Navy submarine is getting ready to sail under secret orders. Onto the dock, after a special 30-mile run, dashes a paper merchant's delivery truck with a ton of cut-size bond paper to be loaded aboard.

On a new western Pacific airfield, hundreds of thousands of index cards are unloaded with the first shipment of planes and repair parts—to record the flow of the spare parts into battle service.

From the crow's nest of a cruiser, the lookout sees another war vessel on the horizon and refers to his book of ship silhouettes, a book printed on special waterproofed paper.

Battle orders, diplomatic mail, selective service questionnaires—in thousands of critical ways daily, paper proves itself essential material of war.

Besides the making of paper, Hammermill is engaged in prime contracts and subcontracts for war materials of wood and metal. But it is for the production and delivery of *paper* that Hammermill was honored with the Army-Navy Production Award, the "E" flag.

Modern business methods and modern war methods are alike in their dependence on paper and "paper work." Today, paper *is* essential war material.

HAMMERMILL PAPER COMPANY • ERIE, PENNSYLVANIA

wooden barrels may eventually be packaged in fiber drums.

With the early scarcity of jute or burlap bags, which are imported from India, the chemical and feed manufacturers turned to paper and cotton bags. In some cases, cotton bags were not satisfactory until a liner of creped kraft paper was applied with a water-proofing agent. Multi-walled kraft paper bags, with an asphalt layer or other protective coating to meet special conditions, are also being used in increasing quantities by the chemical industry. For example, crystal urea was formerly packed in burlap bags lined with latex-coated paper, but as latex is now prohibited for this use, it is packaged in multi-walled paper bags. Fertilizers, long shipped in cloth bags, were packaged last year in multi-wall kraft bags. Potatoes and agricultural seeds are now being shipped more extensively in stout kraft bags and sacks.

Military demands on the pulp and paper industry are, of course, very large and requirements are in many cases very exacting. Research and experimentation last year developed a new type of paper package for "Emergency D" rations, sufficiently compact to slip into the pockets of aviators and crew members. This paper board carton, with a special coating, is constructed and sealed to resist extremes of temperature, vermin, toxic gasses and other deteriorating influences upon foods. It will withstand 180 degrees bending without breaking and is hard sized, odorless, tasteless and will not crack, chip or otherwise deteriorate at temperatures varying from 20 degrees below zero to 130 degrees F.

Research Finding New Paper Uses

Research and testing of a wide variety of paper products is constantly being conducted by the mills. The Quartermaster Corps Subsistence Laboratory is also very active in devising new packaging methods. It developed last year a new paper five-gallon carton which is moisture proof and affords protection against insects. It is of the "bag within a bag" type, the dehydrated food being placed in a laminated glassine bag, which is slipped within a heavier moisture-proof bag. A sheet of kraft paper is laminated to a thin sheet of lead foil to further increase the protection of the contents. The inside layer is of a vapor-proof cellophane. The bag is then packed in a weather-proof solid fiber box; two of which are packed for shipment in a weather-proof solid fiber box.

The packaging problem in connection with the successful production and distribution of dehydrated foods, actually involves various special protective materials for different foods. Tin containers have long been the standard, as has glass, but the latter has the great disadvantage of fragility for military supplies. With tin highly essential for other uses, considerable experimentation with paper has been conducted and notable progress has and continues to be made in perfecting paper packages that will satisfactorily serve and replace critical materials. To meet the important considerations of the U. S. Quartermaster Corps, a suitable paper container must (1) be resistant to immersion in salt water for 24 hours, (2) stability of package and contents must be provided from 20 degrees below zero to 120 degrees F., (3) it must be resistant to penetration of oxygen or deleterious gasses, (4) it must resist insect infestation, (5) it must retain inert gasses within the package and (6) it must have high resistance to vapor-moisture transfer.

Paper is apparently the only abundant substitute or alternate material possessing the potential qualities required and development of an eminently successful package is progressing. As tin has so long been used as a container for a wide variety of products, special equipment for its mass production has been very highly developed. To attempt to find in paper a substitute for tin, at once creates difficult production problems. Although progress in paper packaging is now proceeding rapidly, it takes time to develop mass production methods to insure a low or relatively reasonably priced product.

New Paper Oil Can is Developed

An example of this kind is that of the new plastic-lined fiber oil can. This container is the result of five years of research. It is referred to as a container that not only successfully replaces tin but will continue as a permanent oil package. It is a spiral-wound can with drawn fiber top and bottom, the paper board being made of straw and waste paper. In its manufacture, three new oil-impervious compounds were developed; one an adhesive to bind the 3-ply spiral walls and to cement the tops and bottoms; a second adhesive to affix the labels to the exterior, and a third, which is a tough, elastic synthetic plastic, is required to coat the interior of the container. This paper oil can weighs 10% less than the tin can it replaces and is easily opened with a pocket knife. The containers are packed in cartons of 12, reducing the weight from 60 pounds to approximately 27 pounds per carton. Packaging of this type is expected to fill the requirements for packaging beer and other liquids, beans and soup.

Paper Alternates for Metal

The development of folding carton and fiber board substitutes for metal containers has been very gratifying. Development of a folding carton containing an inner bag to make a liquid-tight package, has been in progress for the past decade. The great adaptability of paper as a material for processing, and its relatively low cost as a raw material for packaging, makes paper of high potential utility. To meet the requirements found in a tin can, the paper package must in most cases be air tight, moisture-tight and very often greaseproof. Various types of paper packages have been devised that test out admirably, but the problem of low-cost production is an accompanying problem that must also be solved. Now that the use of tin and steel plate must be drastically curtailed so far as practicable, the bag-in-carton and wax dipped carton types of packages will no doubt be even more rapidly developed.

Among the new fiber board packages which replace former metal containers are new types of fiber containers, with metal rims, for packaging shells, howitzers and hand grenades. New fiber containers are in use for talcum powder and similar products and for tobacco. All fiber cans, drums and tubes, many of which are provided with cellophane and other protective linings, are replacing metal for baking powder, tea, coffee, shortenings and for many other household products. New and improved uses for paper have steadily progressed in the past and developments to meet the necessities of war are now accelerating this progress.

★ WAR on *Wear!* ★

MANHATTAN'S suggestions for the Care of POWER TRANSMISSION BELTS

How NOT to do it! Don't nail up a board to keep belt on pulleys. Align pulleys correctly and keep them clean.

Note how belt hugs clean, correctly aligned pulleys. Belt runs true and is in excellent condition after three years because of daily checking and cleaning.

THE greater the output, speed and strain, the greater the belt wear. "Keep 'em running" on the factory front—with less wear and trouble—by following these simple instructions.

1. Do not allow oil, grease or gasoline to come in contact with belt.
2. Avoid exposing belts to sunlight and excessively hot or cold weather.
3. Avoid heavy overloads.
4. Don't leave tools or other objects near belt to get caught in drive.
5. Don't allow belt to rub against stationary objects. (See inset photograph.)
6. Use right size and type of belt on pulleys of correct size—too small pulleys shorten belt life.
7. Do not try to take out all stretch on new belt. Install only tight enough to pull load without slipping—then shorten only if necessary.
8. Use proper type fasteners of correct size for pulleys.
9. Keep tight side down for greater arc of contact and more power.
10. Pulleys with excessive crown cause fastener failure.
11. Do not apply large belts by rope and power.
12. Use constant tension motor base on short center drives.
13. Cut belt square and line up before splicing. Seam side away from pulleys.
14. Keep pulleys clean, in good condition and in correct alignment so that belts will run true and wear evenly.
15. Keep proper tension. Too tight a belt may cause fastener and bearing trouble; too loose, slip and wear.
16. If dressing is necessary, use type recommended by belt manufacturer. Never use rosin. Correct fault in drive instead of dressing belt.
17. Provide take-up facilities.
18. Inspect splices and remove worn fasteners before they cause injury to belt.
19. Avoid slippage, evidenced by polished surface.
20. Use factory-made endless belts whenever possible.
21. Cut down large worn belts into smaller sizes for light drives.
22. Consult your MANHATTAN representative. Write factory or your distributor.

Inspect daily with special reference to above suggestions. It is constant care that reduces wear and keeps your belts turning your machines with the minimum of stoppage.

"Care of Power Transmission Belts" wall cards available for your maintenance department—also for Hose, V-Belts and Conveyor Belts. Write for those you want.

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Fiber Containers Meet Severe Tests

The severe test to which fiber containers must be subjected in shipping foodstuffs overseas are, of course, not present in domestic commerce. Containers now carried to the far north and to the extreme south, must often stand unprotected from the weather, must frequently be dumped into the surf when landing supplies for the armed forces stationed in the tropics, are often badly stowed in a ship's hold and are generally subjected to frequent and very rough handling in transit. It has been difficult to manufacture a corrugated box to fully meet the requirements of the Army, Navy and Lend-Lease officials. Paper has limitations, of course, and when the standard is the nailed wooden box, it is a hard problem for the manufacturers of paper products to devise an equally satisfactory shipping container. An insoluble adhesive is one of the prime requisites to meet this exacting service. One example of how this problem was at least partially solved may be found in the new type of corrugated weather-proof box, made from .030, 200-pound test cylinder liner and .009 straw for corrugating. The outer liner is extra sized. The box is constructed from standard materials and silicate of soda is used as an adhesive.

Another Important Example

Another important example in the development of paper shipping containers is that of the weather-proof solid kraft box. This new container was initially constructed of a .065 solid 100% kraft board, with a bursting test of 780 pounds and a very high wet-strength factor. Although considered to compare favorably with .100 chip filled fiber, the thickness was increased to .100. Tests of this type of box, in the construction of which an insoluble adhesive is used, were very severe. The basis of the test included 50 drops when dry in a revolving drum, followed by immersion in the ocean for 24 hours. In comparison with nailed and the wire bound wooden shipping boxes, the .100 solid kraft fiber box was a success.

Industry Contributes Largely to War

The many important contributions which the pulp and paper industry is making to further the progress of the war are so numerous that only the leading features can be included in this brief summary of accomplishments. Chemical wood pulp itself provides nitro-cellulose for the manufacture of explosives, for rayon, and for the production of pulp molded goods. In addition, its contribution to plastics covers a field of present great importance and one in which the possibilities appear almost unlimited. An example in which plastics with a wood fiber base are now replacing scarce materials, is that of a strong paper impregnated with phenol-formaldehyde to fabricate wing tips, rudders, elevators and other surfaces in the aircraft industry. The paper is formed from a special wood pulp and the aircraft concern reports the new product is stronger and lighter than aluminum used for the same purposes.

Potential Value of Plastics

The potential value of the plastics has attracted wide attention since this nation entered the war. Research by paper mills and by the United States Forest Products Laboratory have already demonstrated, for example, the value of lignin, formerly ejected as waste in the manufacture of wood pulp. From the pure lignin acid is derived vanillin, the flavoring constitutent of vanilla and also a material replacing tanbark. By cooking the effuent liquid with hardwood, plastic pulp is produced. This is formed into sheets under pressure of 2,000 pounds per square inch and becomes laminated plastic. It is used for tabletops, refrigerator doors, airplane doors, airplane wings and new uses are almost daily being opened to this new product, as by mixing with phenol or carbolic acid, a raw material is produced possessing almost endless uses.

This type of plastic is tough, strong as steel and is water resistant.

The essential character of the pulp and paper industry in the national economy appears to be most practically demonstrated by its contributions to the war effort. This summary is a means to this end. Any complete inquiry into the subject must inevitably reveal that it would be difficult if not entirely impossible to maintain the present high efficiency and standard of American production and living, without the low-cost contribution which wood pulp and paper has for many years made and continues to make. The conclusion appears unmistkable that pulp and paper are vital in war and in peace and that the pulp and paper industry is not of secondary importance today but a prime, essential industry, although some types of paper and paper products may reasonably be classified as non-essential in a war-time economy and quantities of paper available for civilian consumption may be curtailed or rationed as necessity may dictate.

Form Book and Writing Committee

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 17, 1943—WPB has announced the formation of a Book, Writing and Ground Wood Industry Advisory Committee, and a similar committee for the Wrapping Paper Industry.

The Book, Writing and Ground Wood Committee with Charles W. Boyce as government presiding officer, includes the following: Guy H. Beckett, the Beckett Paper Company, Hamilton, Ohio; Ralph M. Beckwith, Crocker, Burbank & Co., Fitchburg, Mass.; Clarence A. Clough, New York and Pennsylvania Company, Inc., New York, N. Y.; Fred W. Cole, Fraser Industries, Inc., New York, N. Y.; Stuart B. Copeland, the Northwest Paper Company, Cloquet, Minn.; Dwight R. Curtenius, Allied Paper Mills, Kalamazoo, Mich.; Hugo B. Hanson, W. C. Hamilton & Sons, Inc., Miquon, Pa.; Walter L. Mead, Consolidated Water Power and Paper Company, Chicago, Ill.; John R. Miller, West Virginia Pulp and Paper Company, New York, N. Y.; and W. B. Zimmerman, Howard Allied Paper Company, Franklin, Ohio.

Mr. Boyce is also government presiding officer for the Wrapping Paper Industry Committee, which includes the following: William Anders, Nashua River Paper Company, E. Pepperell, Mass.; Paul Bachman, Riegel Paper Corporation, New York, N. Y.; John R. Diggs, Mosinee Paper Mills Company, Mosinee, Wis.; Willard Dixon, St. Regis Paper Company, Harrisville, N. Y.; Neal Nash, Nekoosa Edwards Paper Company, Nekoosa, Wis.; Robert F. Nelson, Glassine Paper Company, West Conshohocken, Pa.; H. O. Nichols, Crown-Zellerbach, New York, N. Y.; A. Southen, Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich.

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A Summary of Government Orders Affecting Paper in the War Effort

By Lynne M. Lamm, Washington Correspondent, PAPER TRADE JOURNAL

Because of the war, Washington has in recent months had a profound influence on the operation of the pulp and paper and other industries of the country. This is due, of course, to the numerous orders promulgated by various special government agencies particularly the War Production Board and the Office of Price Administration to meet the emergencies caused by the prosecution of the war. The summary which follows of the various orders affecting the pulp and paper industry during the year 1942 from both WPB and OPA is, therefore, when the industry for the year is being reviewed, of timely and special interest:—

Restricting Inventories

Under the date of January 8 of last year three branch chiefs of OPM joined in warning all manufacturers, converters, users, and distributors of pulp, paper, and paper products to refrain from building up excessive inventories.

It was pointed out that drastic action under Priorities Regulation No. 1 might be taken against any person permitting inventories to go beyond "a practicable working minimum."

Early in February WPB requested the hosiery industry to pack its products in a special manner in order to save an estimated 7,000,000 pounds of boxboard and paper annually.

A practicable working minimum inventory of wood pulp was defined later in February as not in excess of a sixty-day supply by Interpretation No. 1 of Section 944.1 of Priorities Regulation No. 1 issued by WPB Director of Industry Operations. The sixty-day supply, as used in the interpretation, was to be based on current method and rate of operation during any period of ninety continuous working days of the previous six months.

Wood Pulp Allocated

Early in March WPB, seeking to conserve supplies and direct the distribution of wood pulp, placed the entire wood pulp industry under an allocation system which became effective May 1. Under this system no deliveries of wood pulp were to be made except by specific authority of the Director of Industry Operations. Later that same month WPB modified its method of controlling inventories of wood pulp in order to provide relief for certain types of consumers whose manufacturing operations require inventories in excess of 60 days' supply.

Manufacturers of paper, paper board and paper products who consume waste paper were permitted to accumulate inventories without restriction.

Later in April an interpretation of General Preference Order M-93 was issued by WPB in order to facilitate administration. This order set up an allocation program for wood pulp effective May 1.

Early in June WPB Pulp and Paper Branch issued a bulletin to the industry relating to material priorities assistance.

An interpretation of General Preference Order M-93 was issued in July, which directed the distribution of wood pulp to consumers under an allocation system to clarify certain points with respect to administration of the order.

To Conserve Chlorine

On August 1 restrictions on the "brightness ceiling" of 100% rag content paper were removed by Amendment No. 2 to General Limitation Order L-11, which was designed to conserve chlorine. Previously, the "brightness ceiling" of 100% rag content grade paper under the chlorine conservation order had been fixed at 82%.

In order to eliminate superfluous administrative operations, WPB Director General for Operations removed shipments of less than five tons of wood pulp in any calendar month from the restrictions on deliveries imposed by General Preference Order M-93.

Control of Pulpwood

In October the WPB Director General for Operations established by Order M-251 machinery for control of distribution and use of pulpwood. The order also provided that producers of wood pulp must file monthly reports showing receipts, consumption and inventory of pulpwood for each mill they operate. That same month the need for safeguarding essential pulp production was reflected in Schedule 1 to General Preference Order M-251 which restricts operations of Puget Sound pulp mills. Copies of this schedule were mailed to affected mills the latter part of October.

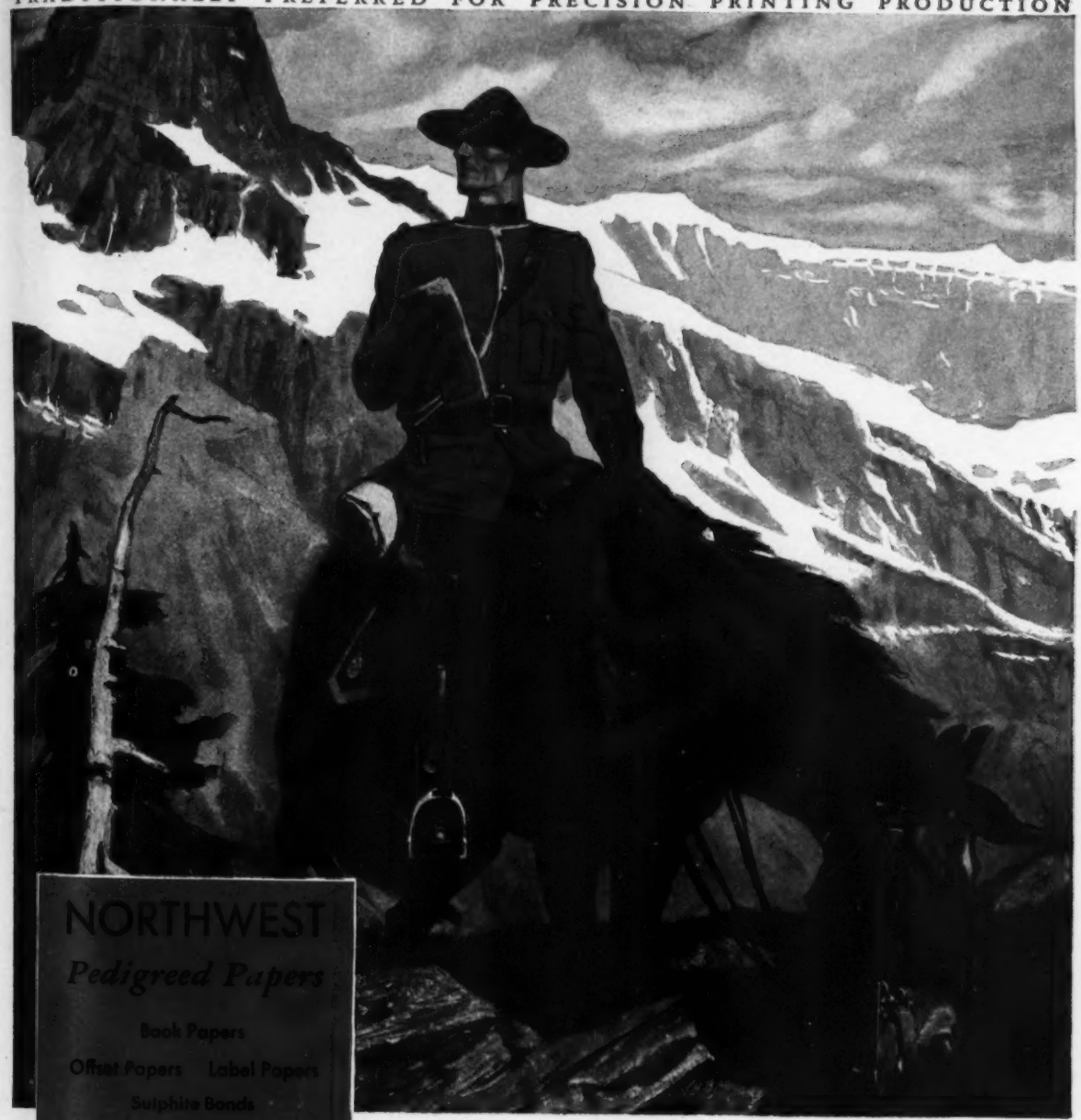
Also, a move toward exercising further control of pulpwood in the states of Washington and Oregon was taken by the Director General for Operations, with the issuance of Schedule No. 2 to General Preference Order M-251.

Curtailment of Paper Products

The first step toward curtailment of the production and use of paper products was taken the last day of October by the American and Canadian governments according to an official WPB announcement. Broadly speaking, the production rates of various paper products, including newsprint, were to be limited to the average operating rates of the past six months, as a result of orders issued by the War Production Board in the United States and the Wartime Prices and Trade Board in Canada.

During the year 1942 an important activity of the Office of Price Administration in the field of paper was informal action. Voluntary agreements were reached maintaining the prices of various grades of wood pulp. Other voluntary agreements were made covering the prices of converted paper products and certain types of paper board and paper board products. These agreements affected the prices of such varied things as wax paper, envelopes, cups and

TRADITIONALLY PREFERRED FOR PRECISION PRINTING PRODUCTION



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Northwest Papers flow through many channels to serve a wide variety of needs in our Country's war effort. Retaining all their traditional characteristics of dependability, they continue to ease the printers' paper problem in a practical manner. Their wide variety permits selection of a grade fitted to the job in hand, and thus importantly promotes economical production. Our heartfelt hope is that in all their applications, Northwest Papers will contribute immeasurably in our united purpose to help win this war.

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containers, lace paper, paper dishes, drinking straws and book matches.

Freezing Prices

During the summer period OPA issued a number of letters, freezing prices or requesting that manufacturers maintain prices already established. The first type of letter was used with manufacturers of industrial papers; the second type was used to stabilize prices of wrapping papers.

OPA used more formal controls to stabilize paper prices during the statutory period. A wood pulp regulation (No. 114) was issued in the middle of April. A temporary regulation was issued, No. 16, establishing a maximum price for newsprint of $50 a ton. This regulation was converted into a permanent regulation, No. 130, at the end of the month, when the General Maximum Price Regulation was announced. On the same day Schedule No. 129 appeared. This latter schedule fixed prices for many industrial papers and converted paper products and replaced the voluntary, informal controls that had been in effect.

The wide use of voluntary agreements that characterized the period prior to the issuance of General Maximum Price Regulation, was especially desirable in controlling paper prices because of the variety of propducts and the difficulty of establishing definite prices on specific amounts. The unsettled state of the industry also recommended a flexible price regulation. With the prospect of the General Maximum Price Regulation, however, it became necessary to fix certain prices, so that the few producers who had not signed past agreements should not benefit, as against those who had given their cooperation. In particular, Schedule 129, which formalized several voluntary agreements, was intended to guarantee that there would be an equality of price as between the various members of the industry when the General Maximum Price Regulation went into effect.

Eliminating Inequities

The heavy demand for paper and paper products that characterized the first quarter of 1942 fell off sharply during the second quarter. Main reasons for this development were (1) Conversion of civilian industries had decreased the demand for many paper items; (2) because of fears of shortages and price increases, many consumers of paper and paper products had anticipated their requirements and accumulated large inventories so that they were out of the market; (3) the waste-paper campaign left people with the impression that there was a shortage of all kinds of paper and that it was unpatriotic to use paper.

Because of these conditions, OPA made several refinements and adjustments of regulations already in existence, and issued new regulations to eliminate inequities or to provide more simplified methods for determining maximum prices.

Pulpwood and Pulp Prices

Prices for pulpwood were exempted from the General Maximum Price Regulation. Prices in the Lake Central and Northeastern areas continued to rise in spite of the fact that production in the paper industry was declining. In the Pacific Northwest, where pulpwood is produced in the form of logs, ceiling prices were established. The main problem of price control for this commodity centered on the necessity of paying higher wages in order to prevent workers from leaving the woods for more profitable work in nearby war industries. OPA made investigations to determine whether specific regulations should be issued.

Wood pulp was already under Maximum Price Regulation No. 114. No major problems developed in this field, partly because there was a slight falling off of demand. Two amendments to this regulation were issued to take care of specific operating problems that arose. Amendment No. 1, issued on May 14, brought the provisions of this regulation having to do with export prices into line with the General Maximum Export price Regulation, which became effective April 30. The amendment established maximum prices at which persons other than the domestic consumers might acquire paper grades of wood pulp. Amendment No. 2, issued July 2, allowed producers of specialty grades of wood pulp to file their prices for approval and sell immediately at those prices, subject to revision by the Administrator. The purpose of this amendment was to provide greater facility in handling the price of specialty grades than was possible under the original regulation. Work continued in connection with the expanding production of the special grades used for rayon and nitrating purposes.

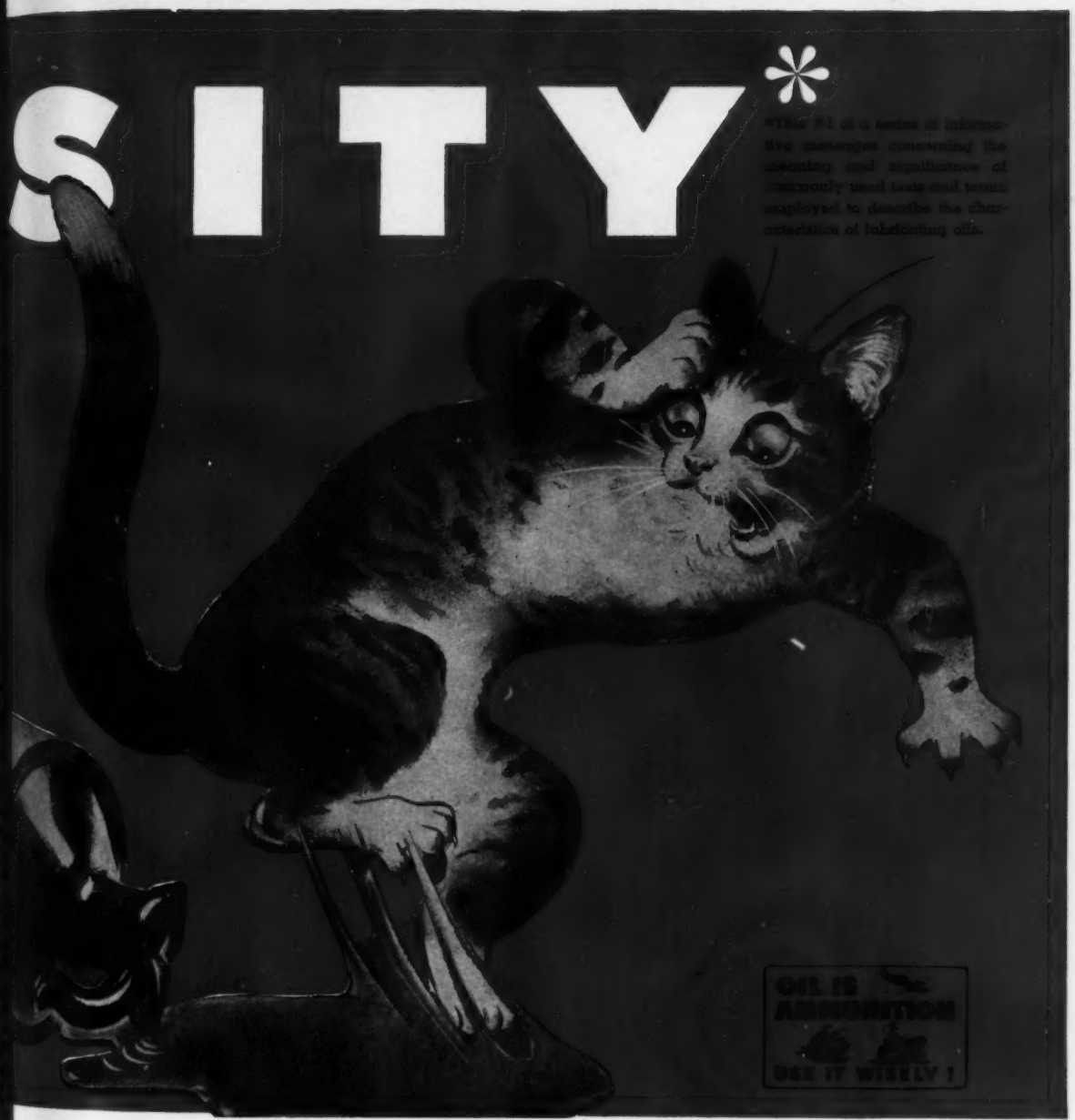
Waste Paper Prices

Waste paper had been under Price Schedule No. 30 since the fall of 1941. The great success of the waste paper campaign, coupled with the decreased demand for paper and paper board, brought about a decided weakening of the waste paper market. It was not until the end of July that any signs became discernible of a recovery in waste paper prices. Three amendments to Schedule No. 30 were issued during the quarter. Amendment No. 3, issued May 12, removing price ceilings from unsorted waste paper stock. Dealers had to warrant that they would sort and market this stock under grade designations resulting from this sorting operation. The purpose of this amendment was to encourage the development of the higher grades of waste paper. Amendment No. 4, issued May 19, gave effect to the licensing and enforcement provisions contained in Supplementary Regulation No. 5 to the GMPR. Amendment No. 5, issued July 17, provided a method for establishing maximum prices for specialty grades of waste paper. Under this amendment, buyers or sellers of specialty grades report their intended prices for purchase or sale to OPA with an appropriate description of the specialty involved. Transactions are permitted at these prices, subject to future adjustments by the OPA.

Price of Newsprint

Maximum Price Regulation No. 130 for newsprint became effective on May 11, superseding the temporary regulation in effect for more than a month prior to that time. This regulation imposed a ceiling price on newsprint paper at point of delivery, with approprite differentials for various zones within the United States. This regulation also extended the ceilings to purchases of Canadian newsprint, which accounts for about 75 percent of the United States consumption.

Amendment No. 1 was a verbal correction of this regulation. Amendment No. 2 issued on July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*This #1 of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.
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3, 1942 established a maximum differential of $3.50 per ton for superstandand newsprint. This special type of newsprint has for some years been used by publishers and printers for rotogravure printing. The bulk of superstandard newsprint was sold at this differential.

Because of the issuance, during the fall and winter, of freeze letters establishing the October 1941 levels as maxima for printing and writing papers, prices under the GMPR were those of last October. Because of the falling off in advertising and the curtailment of civilian production, demand for these papers fell off sharply during the quarter and no significant problems arose that required action by OPA.

Section 302 (C) of the Emergency Price Control Act of 1942 exempted books, magazines, periodicals, and newspapers from price control. The first specific action to control prices in the printing and publishing industry was taken with the issuance of the GMPR. All the products and services normally produced in this industry became subject to this regulation with the exception of books, magazines, newspapers and periodicals.

Prices for Converted Paper Products

Maximum prices for all industrial papers and many converted paper products were established by Maximum Price Regulation No. 129. This regulation was issued simultaneously with the GMPR and merely formalized a number of voluntary agreements. The maximum prices established were those in effect during the period October 1-15, 1941, although a December base date was established for a few items and specific ceiling prices were specified for kraft wrapping and bag paper.

"Delivery" Deleted

Amendment No. 3, issued May 30, deleted the word "delivery" from the definition of "highest price charged" as it appeared in the regulation. In many instances, manufacturers had made no sales during the base period but had been making deliveries on orders contracted for early in 1941. Without this amendment, manufacturers would have been forced to revert to prices in effect as far back as March and April of 1941, which was not the intent of the regulation.

Maximum Price Regulation No. 140, issued May 5, established maximum prices for manufacturers, wholesalers, and retailers of sanitary napkins. This regulation was designed to reduce unwarranted price increases which had taken place. It was estimated that this regulation would result in a saving to consumers of about $4½ million annually. Amendment No. 1 to this regulation automatically licensed wholesalers and retailers of this commodity. This action was taken because many dealers had been under the erroneous impression that licensing provisions of the GMPR extended only to commodities under that regulation.

Kraft Wrapping Withdrawn

Maximum Price Regulation No. 182, July 23, 1942, withdrew kraft wrapping and standard kraft bag papers from Regulation No. 129, and reduced the prices on these items to October 1-15 levels. This reduction in price was made after a thorough analysis of producers' costs and profits demonstrated that the increase granted in December 1941 was not justified. This regulation also established maximum prices at the wholesale level because investigation had demonstrated that inflationary price increases had taken place at this level prior to March 1942.

Paper board has been under Price Schedule No. 32 since October 1941. Demand for paper board declined sharply during the second quarter of 1942 but prices were maintained at ceiling levels. Amendment No. 2, issued May 11, brought specialty grades of paper board under this regulation.

Pricing Method for Folding Boxes

Maximum Price Regulation No. 187, effective July 30, provided a pricing method for the determination of maximum prices of folding and set-up boxes, corrugated and fiber boxes, and items related to these commodities. This formula required manufacturers of these commodities to use the pricing formula that they employed during the month of October 1941, whereby raw material costs, conversion charges, the base-period margin, and charges for delivery (all of which must meet OPA specifications) are added to determine the price. This regulation was an extension and development of voluntary agreements that had been negotiated with the industries concerned during the preceding months.

Use of Newsprint Limited

The tonnage of print paper a newspaper publisher may use in 1943 will be 100% of the amount used by him to produce his net paid circulation in 1941 plus a 3% spoilage allowance. Action was taken through the issuance by the War Production Board of Limitation Order L-240, effective January 1, which closely follows recommendations made by the Newspaper Industry Advisory Committee at a meeting in Washington with WPB officials on December 10.

Use of Book Paper for 1943

The amount of print paper that publishers of magazines may use during 1943 was announced through the issuance of Limitation Order L-244. Under this order, effective January 1, magazines are limited to 90% of the tonnage of paper used by each publisher during 1942. This reduction applies whether the publisher prints his own magazine or has it printed by a commercial printer.

14,300,000 Tons for 1943

Paper requirements for war and essential civilian use were discussed at a recent meeting of the Pulp and Paper Industry Advisory Committee in Washington.

Latest estimates from the Divisional Requirements Committee on war and essential civilian use requirements for paper and paper board indicated that these products would be needed at an annual rate of approximately 14,300,000 tons. It was explained to the committee members that this figure is tentative only.

Problems Facing the Industry

On the basis of the estimate of 14,300,000 tons the following three problems face the industry: (1) to reduce paper production to that level; (2) to keep it at that level as time goes on and expected raw material shortages threaten to reduce production below that figure; (3) to insure proper distribution of the paper produced in line with end use limitations.

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Kraft Paper Production Sets New Record

By Willard J. Dixon, President, Kraft Paper Association

During 1942 the kraft paper industry established a new record for production for the fourth consecutive year. The increase was not large, amounting to only 3%, but considering the governmental regulations and natural difficulties during the latter part of the year, the new record can be considered a real achievement. Beset on the one hand by increasing manpower and vital raw material shortages and on the other by a constantly changing market from civilian into war requirements, the industry's 1942 production record was proof of its high adaptability.

The industry's production record was not matched in respect to new orders or shipments. New orders in 1942 were approximately 5½% behind those of the 1941 record. This was not unexpected, for the final quarter of 1941 had been marked by pessimistic rumors of serious paper shortages which encouraged an unprecedented amount of speculative ordering. Shipments were closely similar in the two years, 1942 shipments being approximately 2% under those of the 1941 record year. At the end of 1942, unfilled orders were 16% less than on January 1, while stocks of finished paper on hand at the mills increased 82% during the same period. These changes restored the industry's order files and inventories to volumes more approximately normal than had been the case at the start of the year.

The year 1942 opened with a high rate of operations and pressure for greater volume of output continued well into the second quarter of the year. The third week of April saw the industry produce more kraft paper than in any seven-day period in its history. The accelerated decline from these capacity operations to 66% of operations during December requires explanation.

The decline in production was due to two causes. The first of these was a sharp decline in orders for kraft paper; the second was the limitations placed upon production itself. The decline in orders resulted from two principal causes:

a) The government's waste paper salvage program which was undertaken to stimulate waste paper collections to replace the badly depleted stocks of the paper board industry. The paper consumer interpreted the program as applying to primary as well as waste paper products. The kraft paper industry immediately shared the shock of curtailed civilian use along with all other branches of the paper industry. In retrospect the experience may have been a good one to the extent that it disclosed how far the civilian may go in doing without paper and paper products and also the essentialities of paper in civilian use.

b) The issuance of Maximum Price Regulation No. 182. In May the industry had received Maximum Price Regulation No. 129 which placed price ceilings upon many of its products at their October 1-15, 1941 levels and certain wrapping and bag papers at prices which had been agreed upon as fair by the Industry and the Office of Price Administration in December of that year. MPR No. 182, is-

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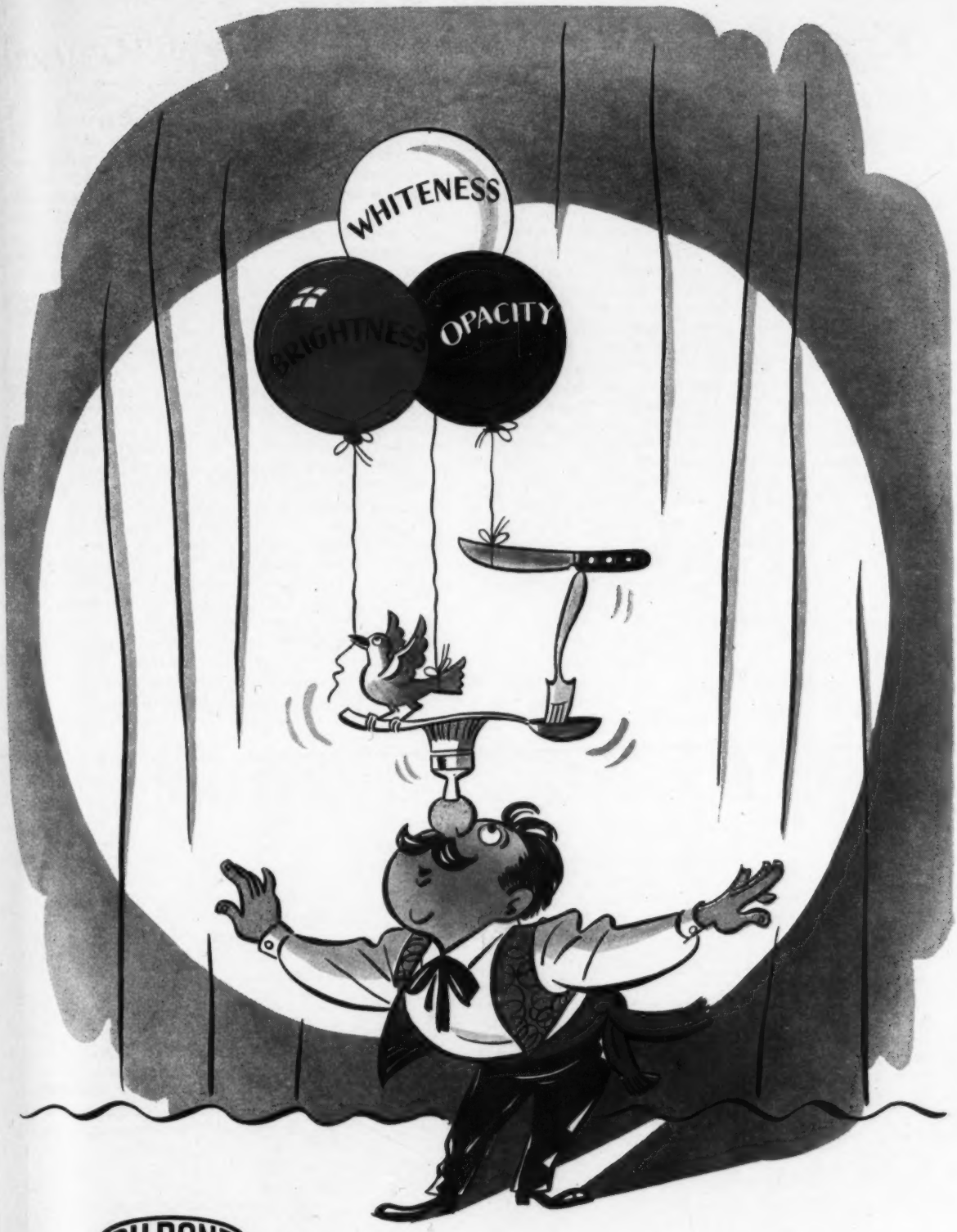

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sued in late July, rolled back the prices on the latter papers from $5 to $15 per ton to levels equal to or less than those of the voluntary agreement of the industry with OPA in May, 1941. For nearly four months prior to the issuance of MPR No. 182 there were rumors among the industry's merchants and consumers that a price roll back was impending. A drying up in orders to a strictly hand-to-mouth basis occurred and continued to the end of the year.

There was also a series of limitations operating directly upon production. Bad weather conditions had brought wood production in many parts of the South to a standstill. The serious tire shortage had augmented this problem. Concentration of wood production in the Pacific Northwest reduced the paper production of several large mills in the industry. The limited supply of Canadian labor in the New England woods was an added problem. Inadequate price ceilings on Lake States wood reduced the paper making potentialities of that important region.

Throughout all of 1942 the taking of men from paper mills and the woods through enlistment, Selective Service, and attraction to the higher wages of defense industries had stripped the mills to skeleton forces, many of whom were without adequate training. Normal production rates could not be maintained.

In addition, on November 30th the paper industry was placed under WPB Order M-241. It established for each paper mill, a top production not to exceed its total average monthly tonnage produced during the second and third quarters of 1942. By the time it had been made effective the decline in kraft paper production had proceeded so far that the effect of the order had already been anticipated. This was not true in the case of every mill, but it was more than true of the industry as a whole.

Thus we ended 1942 with a seriously depressed industry which only eight months before had broken all production records.

The industry will not be able to obtain enough wood in 1943 to maintain the 1942 volume of kraft paper production. Tires and manpower are the serious factors in this problem and both will become scarcer. With further depletion of manpower or increased absenteeism, many mills will very likely find it impossible to continue operations. The War Manpower Commission has made it clear that our industry will have greater problems in manpower in 1943 than in 1942.

Essentiality of kraft paper in the war effort is unquestionable but difficult to prove ton by ton. Throughout 1942 there was continued progress in the development of new uses for kraft paper in the war effort. Its adaptability and inherent toughness have made it a natural substitute for many scarcer commodities.

Latest estimates are that more than 80% of present kraft paper production goes into war and the most important remaining civilian uses. Through its new Order M-241-a, the WPB has ordered the discontinuance of production of paper products currently deemed by it to be non-essential. Of the 23 major products included in its list, none is made exclusively of kraft paper.

There is no question in the minds of the manufacturers and certain government agencies of how thoroughly kraft paper has adapted itself to total war.

The demand for kraft paper in 1943 should equal that of 1942. Wrapping paper requirements for Lend-Lease, food and supply shipments for our armies and industrial wrappings for the many war products should compensate for the reduced civilian requirements for wrappers. Multi-wall sack requirements are increasing constantly. Food rationing forecasts many small unit purchases by every housewife with the small paper bag as the probable solution to this new packaging problem. As for the many specialized converting papers, their 1943 demand should keep step with the over-all American production of armaments, ordnance, supplies and equipment. They may also be expected to be called upon to provide substitutes for other scarcer materials. We can foresee no decrease in total kraft paper demand in 1943.

How well the kraft paper industry will fare in obtaining critical materials for its continued operation in 1943 is a question which cannot now be answered. Rubber rolls, copper screens and all types of heavy metal parts must be replaced from time to time. Our paper mills are continuous units wherein one break can stop the operations of an entire mill. Our requirements are not large but the results can be serious if these few needs are not carefully provided for under the new Controlled Materials Plan.

The July roll-back in prices under MPR No. 182 has had a serious effect upon our industry. Increased costs from lower rates of operations as confirmed by the investigation of the Industry Advisory Committee, are reducing our profits, even before taxes, to the vanishing point. Economic law has shifted the result of MPR No. 182 into an effect upon the papers under MPR No. 129 as well. Without help from the OPA in the very near future mill after mill could easily find itself faced with the necessity of closing down, perhaps permanently, because of continued depletion of cash assets required for its operation. To permit this to occur, as it has already occurred in many industries, should not be looked upon as a sacrifice to total war for every ton of kraft paper that can be produced will be needed urgently somewhere before the end of 1943.

The WPB Order M-241, as amended in January, placed a further restriction upon kraft paper manufacture by 12½%. Lack of wood or pulp, labor shortages, fuel oil restrictions, lack of machine parts, financial problems or any combination of these have made it impossible for every mill to produce even that tonnage permitted it under the Order. The result has been an overall operation of less than 75% of capacity in recent weeks.

Our industry cannot look upon Concentration as an answer to its problem except as the last expedient when all else fails to keep our machines operating. Because of characteristics peculiar to itself, the paper industry must never be subjected to concentration as an experiment. The failure of the experiment could never be rectified in any attempt to return to original conditions. For that reason all paper manufacturers are deeply concerned by persistent rumors of possible concentration in their industry.

From these various analyses we can arrive at a forecast for 1943. This forecast consists of our belief that demand for kraft paper in 1943 will be equal to or only slightly less than its demand in 1942; that production and shipments of kraft paper will not be able to approach 1942 levels by at least 10% and possibly by as much as 20 or 25%; and that 1943 business will be conducted with little or no profit to the manufacturer or income taxes for the government.

Paper Week Devoted to the War Emergency

Annual Conventions Of American Paper and Pulp Association And Affiliated Organizations Given Over Largely To Participation In the War Effort—George H. Mead Is Reelected President.

The sixty-sixth annual convention of the American Paper and Pulp Association and its many affiliated organizations was held at the Waldorf-Astoria Hotel, New York, February 14-19 inclusive.

The leading event of the opening session on Monday was the association luncheon in the grand ballroom at 1 P.M., with addresses by George H. Mead, president, Joseph B. Eastman, director of the Office of Defense Transportation, Arthur G. Wakeman, chief of the Pulp and Paper Section, War Production Board and E. R. Gay, director of the Industrial Commodity Division of the Office of Civilian Supply.

Address of G. H. Mead

As president of the association I felt it my duty to suggest to the governors and executive committee, at the meeting in December, that the annual convention be omitted this year—my suggestion was overruled by unanimous vote, and I may say that I was pleased at being considered so completely wrong.

Now that we are here and have as our guest speaker the distinguished Director of the Office of Defense Transportation, it is certainly necessary for us to find justification of our decision and our presence.

First, in the thoughts of all of us, of course, is a desire to learn how we can individually and collectively best aid in prosecution of the war. Mr. Eastman will give us wise and valuable advice to assist our efforts, but I am sure he will agree that the men of government who are so unselfishly and untiringly directing the many activities of the Civilian as well as War economy, cannot succeed in their great tasks without the wholehearted support of every man and woman concerned.

We are delighted to have with us today from Washington the men of most important places who have responsibility for direction of the Pulp and Paper Industry, and I know I am voicing your sentiments when I tell them how deeply we appreciate the contributions they are making and the work they are doing in our behalf.

To show them in a more material way this appreciation, however, and to make possible greater success on their part, I ask for them, of each one of you, more complete confidence and greater cooperation in their very difficult work.

There has long been a feeling in this country that business and government were two segments of our lives that must of necessity be kept apart, and judged from diametrically opposed standpoints. During the last ten years we have begun to see the fallacy of this thinking.

If we are to win this war now and build a lasting peace immediately after it is won, we must not repeat the mistakes of the past twenty-five years, and again bring upon our children such a catastrophe as the present one. We must here and now solemnly resolve to change our attitude of questioning to one of definite conviction that our first obligation as business men, is to see that the country has our constant and continued assistance, and is properly governed.

With the clear evidence before us of the fate of industry of France because of the lack of interest of business leaders in government and the experience in Germany, with the failure of their industrial leaders to support democracy and free enterprise, choosing instead the seemingly easier method of selecting a dictator, whom they expected to control—how can anyone deny the responsibility that confronts us as directors of American Industry.

We may not forget for one moment that the government directing this country is your government and my government, and particularly in this most difficult war period very many of the men in it are but yesterday out of industries and business organizations, who have but one objective,—helping to win the war with maximum speed and minimum loss to everybody.

Therefore, it is our obligation to think of and do the things that will most help and not hinder them, that will most easily and effectively reach whatever decision must be found in solving the problem at hand. The approach must be one of confidence, not suspicion; of cooperation, not resentment.

It is my observation that far too much time is asked of those in various government offices for the discussion of industry

G. H. Mead, President

problems that should be reviewed by members of the industry before going to Washington—every group should so far as possible have its differences composed before presenting itself to the various agencies.

"Time is indeed running out," and many people impose on the patience of those who have been asked at much sacrifice to serve the government.

It is my considered judgment that all of this war experience in Government-Business relationship is preparatory to a new order in our industrial development that will continue for many years, and that industry representation in Washington will, of necessity, be almost as great and fully as important during the post war period as it is at present.

The procedure will be somewhat different but the principles much the same, and it is again the failure of the past without such relationship that brings me to the conclusion that such new order must prevail.

Next in importance to the discussion of the many ways in which we can make greater contribution to the war effort is consideration of a firm foundation for lasting peace when the battle is over.

Again turning to our experience of the last twenty-five years, it is wise and prudent to review carefully our mistakes and to make a supreme effort to avoid repetition. Only through constant thought and discussion will the right solution be found.

The value of a strong, well organized and managed association cannot be too greatly stressed. The industrial isolationist like the political isolationist will play little part in the future of any country. He has been too costly a member of society and too responsible for much of our suffering.

It has recently been said that "The War with all its hardship and pain has brought one blessing, it is providing a job for everybody who wants a job; we should resolve now that victory will not rob us of this blessing,"—that "Business, labor, agriculture and government should have just one primary object in the four-way partnership, to lead the common man to full employment, a higher standard of living, and a peace which will be permeated by the exciting spirit of new frontiers." With this viewpoint I feel we can not disagree.

To accomplish such an objective we know will require planning and mutual understanding such as we have never yet developed, with a wisdom and vision in the thinking of all groups of our industrial, social and political life.

The business associations of the country will play a larger part in this development than has ever been possible, and in preparation for the work to be done I urge your earnest consideration.

It may seem difficult to accept such a thought at this particular time, since during the past two years of war preparation the government has shown considerable antipathy to all associations as such, and has through a false conception, kept them from playing a proper and useful part. However, as such an attitude is unsound it must and will change and I believe we can already see indications in that direction.

As in all phases of our activities—some badly managed and misdirected associations have caused certain condemnation of the whole, but this makes more important a powerful effort on our part to see that the group gathered here for serious work today develop the best and highest type of enlightened management of its collective affairs.

No single unit of any industry is a safe investment unless the industry of which it is a part is sound. No industry is worthwhile, unless the government under which it lives is a good government. The government survives only if the country endures, and today our country will endure only if we do our fullest part in saving the world and thereafter keeping it at peace.

What a responsibility and what an opportunity God is giving us.

Address of J. B. Eastman

The first guest speaker was Joseph B. Eastman, director of the Office of Defense Transportation, who complimented the paper industry for its cooperative efforts in conserving transportation through greater loading of freight cars and adjustments in packaging and trucking to relieve the heavy burden imposed upon the nation's transportation system by the demands of war.

Mr. Eastman explained the major factors in the problem of domestic transportation and its place in the war economy. He made it clear that in order to conduct this global war, all must contribute. The problem before us, he said, is to find out how much curtailment of the civilian economy is necessary for the war effort and how much must be retained. The loss of our domestic shipping and coastal water lines has intensified the burden of the railroads. Although less locomotives and rolling stock are available than in the last world war and in the prosperous year of 1929, the equipment is more efficient and the railroads are making far better use of it to meet transportation needs.

Emphasizing that the main concern of ODT is to provide reserve transportation capacity for any emergency which may arise, Mr. Eastman estimated that owing to rubber scarcity and man-power shortage, there is likely to be a diminishing supply of truck and bus transportation, with an added burden upon the railroads. Current troop movements, he observed, absorb more than 50% of available Pullman capacity.

Mr. Eastman urged industry to take advantage of the opportunity to make voluntary traffic studies looking to elimination of cross hauling and unnecessary use of any form of facilities. He noted that cooperation of shippers with the military authorities had speeded the loading and unloading of cars, contributing greatly to railroad efficiency. Pooling of facilities by the carriers, he estimated, has freed for use up to 100,000 cars.

Railroad rate increases since the beginning of the war have been very modest in comparison with World War I when they were raised as much as 25%, the speaker noted, adding that curbing of such rate increases provided an instance of the soundness of governmental policy to prevent inflation.

Address of A. H. Wakeman

Today I want to give you an accounting of the pulp and paper situation insofar as present data permit. These data are not complete: they can't be under the circumstances, because some unexpected shortage, some change in overall policy, can alter facts beyond recognition.

We can, however, give you some picture of events to come, the reasons why they are likely to occur, and the broad outline of our policy of dealing with them.

We believe producers and consumers of paper are entitled to know what faces them. Both production

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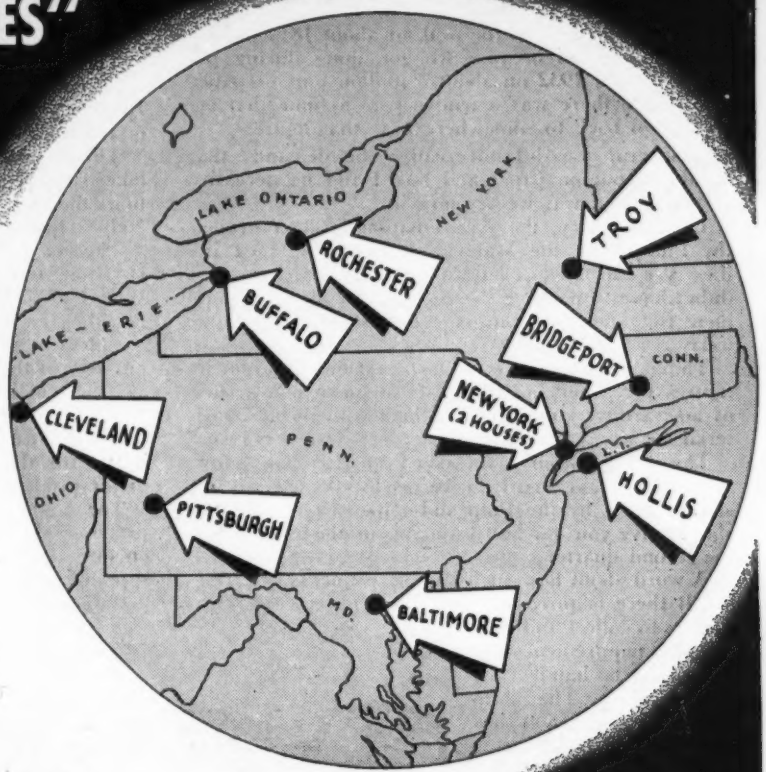

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and consumption are widespread, complex problems involving careful scheduling. Sudden changes for which plans have not been made or at least tentatively considered, can result only in waste, inefficiency and delay.

During the past year thinking has changed. It used to be that the war could be carried on and all the necessary civilian needs taken care of if the industry operated at a rate of 10 or 11 million tons a year. We operated, at the peak of about 18½ million tons a year and because we got along during the depression of 1932 on about 8 million tons of paper and board, there was a tendency to assume that we should go back to somewhere near that figure.

Last year we did not realize the demands that would be put on paper and board and its necessity in the kind of war we are now in.

Last February, the Allied nations still controlled the Philippines, the Malay States and the East Indies. We had not lost our rubber, jute, and sisal. We didn't have to package the food and wrap the equipment for our armies on many fronts as we are doing today.

Things have changed and now that the requirement figures for paper and board are all in, it is a matter of how are we going to meet them with the raw material we have available.

The one question I am asked so often is: "How much paper and board do we need?" As a result of studies made by the Pulp and Paper Division I am able to give you our best estimates of the answer for the second quarter.

A word about how such studies are made. Within WPB there is provision for sub-requirements committees to collect and analyze all requirements for the products handled by the Division. The Pulp and Paper Division has such a sub-requirements committee and on it are representatives of each claimant agency interested in production of pulp and paper. The Division Director is its chairman and is responsible for forming the committee.

Each of the claimant agencies submits its requirements and the Division acts as a consultant to aid the claimant in getting the most accurate data. The Division, as such, has no jurisdiction over this committee. However, every attempt is made to arrive at estimates that are acceptable to all parties—the staff of the Division and the representatives of the claimant agencies. The Director of the Division is responsible for bringing the program into as close a balance as possible. If there is need for further revision, the data are submitted to the Program Adjustment Committee. Final action on the program is taken by the Program Vice-Chairman, Mr. Eberstadt.

E. W. Tinker, Secretary

Let me tell you who the major claimants for pulp and paper are.

First is the Army. Its representative presents requirements for all its direct military needs.

Second is the Navy. Its representative presents its own requirements as well as those of the Coast Guard, Marine Corps and the Maritime Commission.

The Administration of Lend-Lease has a representative who watches the requirements for the United Kingdom and some other countries, with the help of the State Department.

The Board of Economic Warfare's representative takes care of that agency's requirements and in addition, the requirements of the countries under Mr. Nelson Rockefeller's jurisdiction.

The major claimant for paper and board is the Division of Civilian Supply. This is a part of the War Production Board under Mr. Nelson. It is by far the largest claimant. The Division of Civilian Supply has to take care not only of civilian needs, but also of the indirect war needs of the Government agencies, with the exception of the military.

The total requirements of these claimant agencies today is more than 15,000,000 tons of both paper and board for the year. I will break this down by the major products of the industry.

The first is newsprint. This is an international problem. We only make about 20% of the newsprint on our side of the border, Canada being the major supplier. This industry is now operating at 10% below the peak base period that has been chosen for all these calculations. This base period is the six months ending March 31, 1942.

After careful checks on this side of the border, as well as in Canada, the figures on wood supply, including wood on hand and the quantity now being produced show that the amount available for production will just about balance with the consumption if the industry operates at 80% of its peak. Newsprint consumption therefore, must be cut further, probably 10%, about the end of the first quarter of this year.

Printing papers, covering the whole field from super book to envelope, tablet and post card and including groundwood paper, are now operating at 80% of the peak period. The Requirements Committee's figures, as reported to us, are well below the present production rate. This means further curtailment in use to absorb the difference

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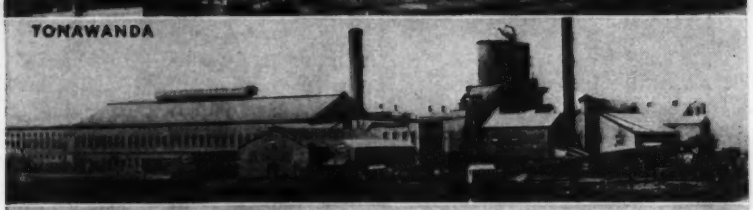

THANK YOU

We wish to thank our many friends in the Trade for their splendid cooperation during the difficult days of the past, and know you will bear with us the additional problems that are ahead of us, so that we in the paper industry may all do our utmost to help the war effort.

PRINTING PAPERS

Book, Bond, Ledger, Mimeo, Manifold, Duplicator, Offset, Text, Vellum, Map, Lithograph, Tag, Index, C. I. S. Label & Litho, Ticket, Bristol, Rotogravure, Groundwood Magazine, Groundwood Book, Groundwood Mimeo.

CONVERTING GRADES

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between production and consumption. We hope to be able to do this on a gradual basis, reviewing the problem of supply available regularly. Another cut in consumption in the neighborhood of 10% at the end of the first quarter is indicated.

The requirements for fine papers are higher, percentage-wise, than the printing papers in general. Bleached pulp being one of the items of which we are short, it is inevitable that a cut in the future will be necessary. The balancing of these grades will have to be done from now on by types of paper. Some grades will be held at present production, others will move down, all according to relative essentiality. The overall result will be a cut of about another 10% at the end of the first quarter.

Last March we had 124,000 tons of bleached pulp to allocate; last month we had only 88,000 tons to distribute to the paper industry. This will indicate to you what the trend in this type of paper will be —27% less pulp, to be exact. However, we produced last month at a higher level; but we couldn't use it for paper, much of the balance has been reserved for explosives.

Wrapping and specialty papers represent a large tonnage—about a sixth of the industry's production. This industry is operating at 15% below the peak now and the essential requirements as presently estimated are just about at this overall level. But there undoubtedly will be changes in certain types of paper, depending on developments. For example, the military needs, both direct and indirect, for strong fibre papers.

Sanitary papers and other tissue will be left just about where they are at present. The public health of the nation and the medical requirements of the Surgeon General's Department dictate this. There may have have to be some down grading, however, as the supply of pulp diminishes.

Container board comes next. This is about a quarter of the total amount of tonnage in the entire field of paper and paperboard. The demands on certain types of board for ammunition containers, overseas shipping boxes, substitutes and a host of special and war products are increasing daily. The major problem faced by the industry is to meet these needs—and they can't be met without cutting into civilian uses. The problem of supplying this container board is no more and no less important than supplying the essential quantities of other types of paper and board.

Our problem is to utilize the short supply of raw material as to produce no more and no less than the essential quantities of each paper and paperboard product, and to see that it gets to the proper use.

Folding and set-up boxes are operating at 80% today. Apparent requirements indicate that the needs will be somewhat higher. As these develop, adjustments of certain types will be necessary. Specialty boards cover such a wide range of products that it is impossible to generalize. Some needs will be much higher, others will gradually fall off, and as these changes take place, many individual adjustments must be made—for example, as replacements for leather become increasingly urgent. Current operations appear to be in balance.

The last on this list is building papers and building boards. For military reasons, these papers are to be left on the unrestricted list for the time being. The first call on this industry's product lies with the armed forces.

How are we going to make more than 15,000,000 tons of paper and board with the amount of pulp we know we have available? From the estimates today, we are going to have about 8½ million tons of wood pulp available for paper and board production in this country. This will mean forcing the use of waste paper and other waste fibres up to the limit, and further down grading. This is emphasized by the relative fact that last year we used 10,500,000 tons of wood pulp to make 16,584,520 tons of paper and board.

This year we will have to get along on about 8½ million tons of pulp, and the rest will have to come from waste paper and other waste fibre.

This is a challenge to the industry and a magnificent opportunity for it to give tangible proof of its ingenuity.

These are the facts. We have been given the job of doing everything we can to maintain production at the indicated levels first, and then, when necessary, taking the steps needed to balance with a smaller quantity of fibrous material.

No one realizes better than we that the primary job of gearing production to essential uses and of cutting out the non-essentials must lie with you, the industry. No sane person wants to direct all sales or uses of paper from Washington.

That is where we come in. We can give you signs on which way to go. We can eliminate non-essential uses, and we can give you essential classifications, when necessary.

This does not all lie in the province of the Pulp and Paper Division. With respect to end-use control, the Printing and Publishing and Containers Divisions have large responsibilities, controlling in the aggregate about 75% of the total production of the industry.

Address of E. R. Gay

In his address Edward R. Gay, director of the Industrial Commodity Division of the Office of Civilian Supply, commented briefly on the outlook for paper and pulp. He said that the best current estimates for essential requirements of all types of paper and board is somewhat below current total production. This does not mean, he explained, that we are insisting that production be brought down to that level. Even though current production is above immediate requirements, latest appraisals of pulpwood supplies, and consequently production, indicate that we shall have barely enough to produce the quantities of paper and paper board which we believe will be needed before the year is over.

Address of F. E. Hufford

At the open meeting of the Traffic Committee on Tuesday, the featured speaker was F. E. Hufford, special assistant to the director of the Pulp and Paper Division of the War Production Board, who delivered the following address:

The Pulp and Paper Industry is conserving transportation, rubber, trucks, truck parts and gasoline in several ways, and I will cite some examples.

HEAVIER LOADING—The industry has contributed materially in the conservation of transportation by heavier loading as shown by the following:

UNITED STATES CARLOADINGS

	3rd quarter, 1942 * Average lading per car (tons)	4th quarter, 1941 * Average lading per car (tons)	Increase (tons)
Printing Paper.....	26.3	24.2	2.1
Wrapping Paper and Bags	24.9	23.6	1.3
Paperboard and Pulpboard	24.6	22.8	1.8
Newsprint Paper	28.2	27.4	.8

* Source—Interstate Commerce Commission.

As an undramatic peacetime commodity, paper long was blacked out by people's indifference. But today it is being flooded with the light of public appreciation, for it is in the mighty drama of war that paper assumes its greatest role. Pulp is essential for explosives, while mills work day and night producing paper for shell containers, food packaging, propaganda leaflets, military manuals, war maps, advertising, and substitutes for certain critical materials. Champion is proud of its importance in the industry, and of its ability to convert great stands of timber into many materials that contribute to America's early victory.

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It will be noted from these figures that the average lading per car in 1942 increased over that of 1941 even before the effective date of ODT 16 Maximum Carloading Order. From information which we have available average carloadings have increased in some instances as high as 63.5%.

Special Directions to ODT 18 covers standards for the loading of paper, paperboard and paper articles for carload shipment. These Special Directions are based on recommendations from this Division. As a result of these directions the industry will contribute its full share to the conservation of transportation by still further heavier loading.

Car Detention—The industry has contributed in a large measure to the faster turn around of cars and have a splendid record in handling cars received for loading and unloading.

Curtailment Order and Other Limitation Orders—It is my opinion that the recent curtailment orders issued by the W.P.B. will have the effect of reducing production over-all by at least 10% from what it would have been had not operations been curtailed to the level prescribed in these orders. These orders will have the effect of saving a minimum of 10% of transportation required by the industry.

Recently several limitation orders have been issued which reduced the consumption of magazines, commercial printing papers, book papers, newsprint paper and folding boxes. In some orders the manufacture of certain paper articles is prohibited. These all reduce the amount of transportation used by the industry.

In 1942 it is estimated that the pulp and paper converting industries required 2,700,000 cars to handle their finished products and raw materials. A reduction of 10 per cent in transportation requirements based on the above mentioned orders would be a saving of 270,000 cars. The effect of the Maximum Carloading Order should produce another saving of 10 per cent or 243,000 cars, making a total saving of 513,000 cars.

Pulpwood—Pulpwood which normally moved by truck direct from the woods to the mill is now taken to the nearest railhead or barge landing thus conserving tires, trucks, truck parts and gasoline. A study of the movement of pulpwood within the South is now being made in an effort to determine what excessive hauls can be eliminated.

Compression—The Division in an effort to conserve shipping space as well as transportation has been working on several compression problems. An order has been issued whereby toilet tissue will be compressed in individual unit size and also shipping case size. The collapsing of toilet rolls itself will save approximately 6,000 cars annually. A study is being made covering the compression of package napkins, paper towels, facial tissue, stationery and envelopes, and this program will save several thousand cars.

Wood Pulp — A reduction estimated at 390,000 car miles was made by this Division in the allocation of wood pulp for the months of August, September and October, 1942. During November and December wood pulp was not permitted to move East from the Pacific Coast. Three pulp mills on the Pacific Coast were closed during these months. As the average haul of this Pacific Coast pulp is 2500 miles I believe we can safely estimate a saving of over a million car miles per month as the result of this action. It is too early to indicate the savings that can be made in the movement of wood pulp during 1943 but indications are that there will be considerable less transportation required than in 1942.

Priority Clinic Session

The "Priority Clinic" meeting which was well attended last year, was again an interesting open meeting feature on Wednesday, February 17. It was held in the Astor Gallery of the Waldorf-Astoria Hotel. The discussion was conducted by J. L. Ritchie, of the Pulp and Paper Division, War Production Board, assisted by H. M. Gray and E. G. Amos of the association's staff. L. R. Stevenson of the Office of Price Administration, was also present.

The meeting was entirely confined to a discussion of CMP Regulation 5, or regulations applicable to the Controlled Materials Plan, including only maintenance, repair and operating supplies. The session was in the form of a question and answer discussion, with no speeches. E. G. Amos explained that the Priority Committee of the American Paper and Pulp Association meets at intervals to discuss priority orders issued and all are welcome to sit in with the committee at these meetings.

The paper and pulp industry, Mr. Richie pointed out, was interested in the Controlled Materials Plan as controlled materials for construction and new work and primarily for materials for maintenance and operation. In discussing some of the definitions of the regulation, Mr. Ritchie explained that "maintenance" means the minimum upkeep necessary to continue facility in sound working condition, and "repair" means the restoration of a facility to sound working condition, when the same has been rendered unsafe or unfit for service by the wear and tear of normal operations.

In reference to inventory restrictions of controlled materials, such as steel, copper, and aluminum, it was brought out that the provisions of this regulation do not allow stocks of materials for any one item beyond the specified quantity allocated for that purpose or rating. Bolts and nuts, for example, which after the Regulation becomes effective, (April 1, 1943) and procured by CMP, must be used for the purpose for which the application was granted, and cannot be used for new work, if the material was procured only for maintenance and operations.

In relation to preference ratings, it was explained that the objective of the Controlled Materials Plan was to cut red tape in filing and granting applications for needed supplies of controlled materials. Under CMP-5, the industry has a better status than formerly, it was pointed out, as the MRC symbol of a Controlled Materials Plan order will be given precedence over any preference rating.

Report of the Technical Committee

The report of the Technical Committee emphasized the need for the wider use of waste paper if the paper industry is to produce the amount of paper needed in the war effort and for civilian use. It was pointed out that the shortage of pulp, due to the pulpwood situation, will require greater conservation of raw materials, and there must be a wider collection of waste paper for conversion into new paper and paperboard than at present.

The committee reported that a survey will be made of the extent and fields in which women can be employed to take the places of men called to the armed

services. This survey will be made to indicate to employers the fields where women have already been satisfactorily employed.

Progress has been made in the biological control of paper-making processes, in the field of providing bacteria-free containers and wrappers for food products.

A.P.P.A. Elects Officers

At a meeting of the Executive Committee and Board of Governors, on Wednesday, February 17, the following officers of the American Paper and Pulp Association were elected:

President, George H. Mead, The Mead Corporation; 1st vice-president, D. K. Brown, Neenah Paper Company; vice presidents, Hugh J. Chisholm, Oxford Paper Company, New York; R. J. Cullen, International Paper Company, New York; D. C. Everest, Marathon Paper Mills Company, Rothschild, Wis.; P. H. Glatfelter, P. H. Glatfelter Company, Spring Grove, Pa.; James L. Madden, Hollingsworth & Whitney Company, Boston, Mass.; John R. Miller, West Virginia Pulp and Paper Company, New York; Cola G. Parker, Kimberly Clark Corporation, Neenah, Wis.; J. L. Riegel, Riegel Paper Corporation, New York; Norman S. Stone, Mosinee Paper Mills Company, Mosinee Wis.; Dwight L. Stocker, Michigan Paper Company, Plainwell, Mich.; Norman W. Wilson, Hammermill Paper Company, Erie, Pa.; J. D. Zellerbach, Crown Zellerbach Corporation, San Francisco, Cal.

Executive secretary, E. W. Tinker, American Paper and Pulp Association, 122 East 42nd Street, New York. Counsel, Wise, Corlett and Canfield, 122 East 42nd Street, New York.

Salesmen Hold Meeting and Luncheon

The Salesmen's Association of the Paper Industry held its twenty-fourth annual meeting on Monday, February 15, at the Waldorf-Astoria Hotel, New York, at which the following officers were elected: president, Norman T. Beardsley, Union Bag and Paper Company, New York; Eastern vice-president, Stanley O. Styles, Martin Cantine Company, New York; Eastern assistant vice-president, E. F. Miles, Crocker-McElwain Paper Company; Western vice-president, Burt B. Fisher, Bergstrom Paper Company, Chicago, Ill.; Western assistant vice-president, Forrest Patterson, Flambeau Paper Company, Chicago, Ill.; secretary, E. O. Merchant, 122 East 42nd street, New York.

The annual luncheon of the Salesmen's Association of the Paper Industry was held on Tuesday in the grand ballroom of the Waldorf-Astoria Hotel. The attendance was the largest in the history of the association with boxes on the two balconies and the main floor occupied. Courtney H. Reeves, retiring president, presented his successor, Norman T. Beardsley, with the Salesmen's medal, which is presented to all presidents on the expiration of their term of office.

A special feature was the stirring motion picture of Time Marches On, presented by *Time* and *Life* magazines, giving a photographic record of events of action on all Russian battle lines. At the conclusion William Chaplain, International News Service correspondent, who returned from Russia in December, gave a vivid account of life in Russia and the strength of the people who are enduring great hardships and sacrifices in their successful struggle with the Germans.

The speaker gave full credit to the Russians for their brilliant defense and offense, and said that their success could not have been accomplished without the help of other countries and they recognized the aid which had come to them from America in the form of planes, tanks, and jeeps. While it has been difficult to get materials into Russia, he said, they are still getting the stuff in despite what the Germans do. Until Russia started its current drive, he said, it was nigh onto impossible to get needed equipment into Russia. America has not given Russia any fighting men. Russia has been seeking a second front to take the pressure off but takes the stand that war on its own lands is Russia's war and conducts it on that basis. The moral help of the Allies, combined with the material aid, has made the Russian drive possible, the speaker said.

Previous to November 7 Americans were not too popular in Russia. When news came through that American troops had landed in Africa they realized that Americans were in the war with them and twelve days later the Russian army went forward with the knowledge that they had a strong military force and able Allies.

Mr. Chaplain said paper is scarce; reporters cannot buy it. They get their paper second-hand from the Russian news agencies and they must write their stories on the back of paper which has already been used by the Russian news agencies. There is no paper for packaging and it was the speaker's opinion that many items which are shipped should have a protective paper covering for perishable material is not able to get through without great loss. Russians have not made enough paper for the war needs of the country and he believed that in our own rationing we should take advantage of the mistakes made by others so that these same mistakes will not be duplicated in this country.

George H. Mead, President of the American Paper and Pulp Industry, who was called upon to say a few words, said that it was a pleasure for him to attend the function for his hearers represented men in key positions in the industry, men in whom the executives in the paper trade had great confidence and the large attendance, he said, indicated that not all salesmen had gone to war, and facetiously remarked that those luncheons held following the war would of necessity have to be held in Madison Square Garden.

Seriously, Mr. Mead said that he has long felt that the industry has had an opportunity to make worthwhile contributions to the war effort because it is international in scope and in its thinking, especially in regard to Canada and he looked for an increase of friendship in the future.

Being the selling segment of the industry, he said, I want this organization to do a selling job for the industry in 1943 and I ask the privilege of talking further on the matter with the executive committee. We want salesmen to sell to the people of America the thought that they refrain from criticism of our Allies, especially the English speaking people of the world. If they do that they will be making a worthwhile contribution to their country and to their industry.

Linweave Association

The Linweave Association at its annual meeting held at the Waldorf-Astoria Hotel, New York City, February 13, elected the following officers:—President, Victor E. Hecht, Zellerbach Paper Company,

San Francisco; vice president, Thomas C. Price, Barton, Duer & Koch Paper Company, Baltimore; secretary-treasurer, Philip Richardson, Storrs & Bement Company, Boston.

Executive Committee:—William T. Black, Allan & Gray, New York City; John D. Williams, D. L. Ward Company, Philadelphia; E. L. Walters, Western Newspaper Union, Omaha; Victor E. Hecht; Hugh G. Boyer, Caskie Paper Company, Charlotte, N. C.

Merchandising Committee:—H. K. Weed, Alling & Cory Company, New York City, Chairman; John D. Williams; Davis G. Bottom, B. W. Wilson Paper Company, Richmond.

Advertising Committee:—James D. Bligh, Chairman, Barton, Duer & Koch Paper Company, Washington; D. A. Durin, Millcraft Paper Company, Cleveland; Michael P. Alogna, Storrs & Bement Company, Hartford.

Following the business meeting the members of the Association were entertained at luncheon by P. P. Kellogg & Co. Division, United States Envelope Company, after which the merchandising plans for 1943 as developed by the company in cooperation with the association's merchandising and advertising committees were presented by Linweave manager, T. H. Chambers, general manager, E. V. Johnson of the United States Envelope Company, and E. L. Wight, advertising manager, were other speakers on the program.

Manager Chambers presented to Jack Stevens, manager, Storrs & Bement Company, New Haven, Connecticut, the trophy for greatest percentage of sales increase for 1942. Trophies for second and third place in this annual contest went to Western Newspaper Union, Wichita, Kansas, and Storrs & Bement Company, Hartford, Conn., respectively.

Advance samples of the proposed line of Linweave boxed stationery, a colorful wedding display with a military atmosphere, a new edition of a booklet "Armed Forces of the United States" and a proposed institutional magazine advertising campaign were among the matters discussed at the afternoon business session.

The meeting concluded with a dinner at Toots Shor's restaurant, New York City.

Paper Mill Supply Dealers Banquet

The thirty-fifth annual banquet of the New York Association of Dealers in Paper Mills' Supplies was held at the Hotel Commodore on Tuesday evening, February 16. This was one of the largest banquets in some years. A very fine dinner was followed by a very pleasant entertainment for which the committee deserved to be greatly congratulated.

The Economy Baler Company gave away a $50 and $25 bond as door prizes.

The following companies had tables:—Sol Ash, Inc., Atlantic By-Products Company, Atterbury Bros., Inc., Barone Bros. Salvage Corporation, D. Benedetto, Inc., Robert Blank, Alfred Bloch & Co., Chas. J. Browne, Cantasano Bros., Inc., A. Cappadona & Co., John H. Carlo & Sons, Inc., James Carrano's Sons, Inc., Castle & Overton, Inc., Darmstadt, Scott & Courtney, Delia Waste Products Corporation, Derrico Company, Inc., Economy Baler Company, Eolio Corporation, Federal Waste Paper Corporation, S. J. Fisher, Inc., Hon. James T. Flannery, Gaccione Bros. & Co., Inc., Gerofsky Brothers, Inc., Goldman, Harris Company, Louis Gottlieb & Co., Inc., James J. Graham Paper Company, Great Eastern Packing & Paper Stock Corp., John D. Greco, Inc., W. J. Green Company, Inc., the Hemingway Company, Daniel M. Hicks, Inc., Hicks-Costarion Company, Inc., A. Imperatrice & Sons, Inc., E. J. Keller Company, Inc., Loumar Textile By-Products, Inc., Charles Maronna & Co., Inc., N. Mastronardi's Sons, Inc., Melrose Salvage Corporation, George W. Millar & Co., Inc., Alfred J. Moran, National Association of Waste Material Dealers, John L. Nielson, Martin Patricoff, R. Rava, Rosenberg, Waldman & Cohen, S. Schapiro & Sons, Inc., Hon. Joseph T. Sharkey, William Steck & Co., Inc., Sterling Mill Supply Company, Inc., Toga Paper Stock Company, Inc., Valva Paper Stock Company, Walker-Goulard-Plehn Company, Inc., Whaling Waste Products Company, and Wilson Paper Stock Company, Inc.

The banquet committee was composed of Walter H. Martens, Chairman, John L. Nielsen and Arthur Rosenfeld.

The officers of the association are as follows:—John L. Nielsen, president; Gus R. Holm, first vice-president; Paul J. White, second vice-president; Alfred J. Moran, secretary-treasurer.

Writing Paper Mfrs. Association

The Writing Paper Manufacturers Association held its 82nd annual meeting on Tuesday, February 16, at the Waldorf-Astoria Hotel, New York. The following officers were elected: president, J. D. Zink; vice-president, H. H. Hanson; vice-president, M. D. Bardeen; executive secretary and treasurer, M. C. Dobrow; assistant secretary, G. V. Johnson.

Executive Committee: J. D. Zink, Chairman, Strathmore Paper Company, West Springfield, Mass.; H. R. Baldwin, Hammermill Paper Company, Erie, Pa.; M. D. Bardeen, Lee Paper Company, Vicksburg, Mich.; G. H. Beckett, Beckett Paper Company, Hamilton, Ohio; R. F. Bellack, Fox River Paper Corporation, Appleton, Wis.; H. V. Burgee, Parsons Paper Company, Holyoke, Mass.; D. D. Coffin, C. H. Dexter & Sons, Inc., Windsor Locks, Conn.; Bruce Crane, Crane & Company, Inc., Dalton, Mass.; I. N. Esleeck, Esleeck Manufacturing Company, Turners Falls, Mass.; W. J. Garrity, The Munising Paper Company, 135 So. LaSalle street, Chicago, Ill.; A. C. Gilbert, Gilbert Paper Company, Menasha, Wis.; H. H. Hanson, W. C. Hamilton & Sons, Miquon, Pa.; T. A. Hendry, The Mead Corporation, 230 Park avenue, New York; J. E. Holmes, Chemical Paper Manufacturing Company, Holyoke, Mass.; E. C. Reid, American Writing Paper Corporation, Holyoke, Mass.; A. C. Remley, Nekoosa-Edwards Paper Company, Port Edwards, Wis.; F. H. Savage, International Paper Company, 220 E. 42nd street, New York; and W. B. Zimmerman, The Maxwell Paper Company, Franklin, Ohio.

Colonel C. M. Piper of the Industry Council, Office of Price Administration, addressed on "Inflation."

Other speakers at this meeting were Harold T. Martin on "The Labor Outlook," and M. C. Dobrow, Executive Secretary of the association, who spoke on "War and Postwar Problems Affecting the Writing Paper Industry."

J. D. Zink, president, dealt in his report with the importance of developing the right kind of relationship and teamwork between management of government officials.

Sulphite Paper Mfrs. Association

At the annual meeting of the Sulphite Paper Manufacturers Association held Monday, February 15 at the Waldorf-Astoria Hotel, New York, Edgar W. Kiefer, president of the Port Huron Sulphite and Paper Company, Port Huron, Mich., was elected general chairman of the association. Mr. Kiefer is well known to the industry, having been connected with his present company for many years. He has already served a term as General Chairman at the time when the Association was reorganized in 1933.

The following were elected to the Board of Governors: Edgar W. Kiefer, general chairman; John E. Alexander, Nekoosa Edwards Paper Company; Fred W. Cole, Fraser Industries, Inc.; Gilford Henderson, Brown Co.; Walter B. Merlin, Hollingsworth & Whitney Co.; Harold O. Nichols, Crown Zellerbach Corporation; Fred P. Pandow, Consolidated Water Power and Paper Company; Rufus L. Sisson, Jr., Racquette River Paper Company; John Stevens, Jr., Marathon Paper Mills Company; George Stuhr, Southern Kraft Division of International Paper Company; and Rufus I. Worrell, Mead Sales Company.

The following were elected vice-chairmen: George Stuhr, vice-chairman, Unbleached Group; Rufus L. Sisson, Jr., vice-chairman, Manila Group; Fred P. Pandow, vice-chairman, Bleached Group; and Harold O. Nichols, vice-chairman, Machine Glazed Group.

Glazed and Fancy Paper Association

The annual meeting of the Glazed and Fancy Paper Association was held on Monday, February 16, at the Waldorf-Astoria Hotel, New York. The following were elected: president, John N. Hazen, Hazen Paper Company, Holyoke, Mass.; vice-president of manufacturing, J. T. Cronk, Hampden Glazed Paper and Card Company, Holyoke, Mass.; vice-president of merchandising, C. H. Hoffman, Hoffman & Hoffman, New York.

William B. Snow, of the Middlesex Products Corporation, Cambridge, Mass., was elected as manufacturing member of the executive committee, and Samuel Lachman, of Lachman-Novasel Company, New York, as merchandising member, both for terms expiring January 31, 1945.

The other members of the executive committee are: Arthur R. Walsh, of Walther and Company, Brooklyn, as a manufacturing member, and Ralph E. Laue, of Bradner Smith Company, Chicago, as a merchandising member, the term of both expiring January 31, 1944. Arbitration committee consists of Harry B. Conglin, of Louis DeJonge & Company, New York, chairman, and Sam R. Fry, of Wyomissing Glazed Paper Company, Reading, Pa., and Geo F. McDevitt, of Blackstone Glazed Paper Co., Pawtucket, R. I., and Charles Matthias, Matthias Paper Corporation, Philadelphia, Pa.

Specialty Paper and Board Affiliates

The Specialty Paper and Board Affiliates held annual sectional meetings on Wednesday, February 17, at the Waldorf-Astoria Hotel, New York. The following were elected members of the board of governors and will select officers at the next meeting of the association: H. S. Lewis, The J. P. Lewis Company; S. B. Sutphin, The Beveridge Paper Company; R. R. Bachman, Riegel Paper Corporation; L. E. Vose, Hollingsworth and Vose Company; Kendall Wyman, The Champion Paper and Fibre Company; Walter B. Sheehan, Missisquoi Corporation; G. E. O'Connor, Mohawk Paper Mills, Inc.; F. C. Ash, Oswego Falls Corporation; T. S. Foster, Foster Paper Company, Inc.; W. S. Gamble, Brownville Board Company; Edward Bailey, Hollingsworth and Whitney Company; H. C. Johnson, The Sorg Paper Company.

Group Chairmen were elected as follows: Tag and File Folder Group—P. R. Bachman, Riegel Paper Corporation, New York; Lined Board Group—T. Stewart Foster, Foster Paper Company, Utica, N. Y.; Bogus Bristol Group—S. D. Sutphin, Beveridge Paper Co., Indianapolis, Ind., and Will Blanks Group—A. H. Miller, J. P. Lewis Co., Beaver Falls, N. Y.

U. S. Pulp Producers Association

The United States Pulp Producers Association held its annual executive board meeting February 14 at the Waldorf-Astoria Hotel, New York, at which the following were elected:

Regional Directors—New England, Amor Hollingsworth, Penobscot Chemical Fibre Company; Middle Atlantic, Norman W. Wilson, Hammermill Paper Company; South, Alexander Calder, Union Bag and Paper Corporation; Lake States, Stuart B. Copeland, The Northwest Paper Company; West Coast, Robert B. Wolf, Pulp Division, Weyerhaeuser Timber Company.

Directors at Large:—Folke Becker, Rhinelander Paper Company; Downing P. Brown, Brown Company; J. M. Conway, Hoberg Paper Mills; U. M. Dickey, Soundview Pulp Company; M. B. Houston, Rayonier Incorporated; Lawson Turcotte, Puget Sound Pulp and Timber Company.

Executive Director:—Oliver M. Porter, 122 East 42nd street, New York.

Waterproof Paper Group

At a meeting of the Waterproof Paper Group of the American Paper and Pulp Association, held on Tuesday, February 16, at the Waldorf-Astoria Hotel, the following executive committee was elected: chairman, Otis Angier, Angier Corporation; vice-chairman, W. J. D. Griffin, Union Bag and Paper Company. Executive committee—A. M. Anderson, Sisalkraft Company; F. E. Donovan, Specialty Converters, Inc.; R. D. Terrien, Central Paper Company; and J. D. Young, Edgewater Paper Company. Alternates are G. E. McCorison, Thilmany Pulp and Paper Company, and W. W. Rowe, Cincinnati Industries, Inc.

Col. Patrick F. Powers, Commanding Officer of the New York Chemical Warfare Procurement District, addressed the meeting and outlined the part waterproof papers are playing in the war. The speaker said that the waterproof paper division of the paper industry is actually a part of the Army, having great responsibilities because the materials it supplies may mean life or death for some of our armed forces.

Paper Makers Advertising Association

The Paper Makers Advertising Association held its annual meeting on Monday, February 15, at the Hotel Lexington, New York, at which the following officers were re-elected: President, Maurice A. Park, Marvellum Co.; Eastern vice-president, Richard A. Faulkner, International Paper Company; Western vice-president, E. S. Colvin, Appleton Coated Paper Company; treasurer, Floyd L. Triggs, Riegel Paper

Corporation; secretary, Bradley E. Stafford, Strathmore Paper Company.

Executive Committee—Hubert Foster, The Mead Corporation; William S. Fowler, Hampden Glazed Paper and Card Company; Robert W. McCormick, Knowlton Brothers; R. F. Walter, Chemical Paper Manufacturing Company; C. H. Cooley, American Writing Paper Corporation; R. S. Rowlett, McLaurin-Jones Company, and Holley R. Cantine, The Martin Cantine Company.

Tissue Association

The annual meeting of the Tissue Association was held on Monday, February 15, at the Waldorf-Astoria Hotel, New York, at which the following were elected: president, R. B. Stevens, Stevens & Thompson Paper Company, Greenwich, N. Y.; vice-president, John McEwan, Mohawk Valley Paper Mills, Little Falls, N. Y.; treasurer, B. F. Picola, Gotham Tissue Mills, Salem, N. Y.; secretary and assistant treasurer, Ross A. Fife, 122 East 42nd street, New York.

Board of Governors: J. M. Conway, retiring president; A. B. Hansen, Grafton Houston, E. E. Grant, John McKirdy, B. F. Picola, R. B. Stevens, Norman Seagrave, B. E. Reider, Joe Hartman, John McEwan, R. G. Fairburn, P. M. Allen, and R. A. Montieth.

Glassine and Greaseproof Association

The Glassine and Greaseproof Manufacturers Association held its annual meeting on Wednesday, February 17, at the Waldorf-Astoria Hotel, New York, at which the following officers were elected: Chairman, Robert F. Nelson, Glassine Paper Company.

Executive Committee: Folke Becker, Rhinelander Paper Co. Rhinelander, Wis.; Paul E. Hodgdon, Deerfield Glassine Company, Monroe Bridge, Mass.; Harry B. Kuhns, Nicolet Paper Corporation, Depere, Wis.; Paul F. More, Westfield River Paper Company, Russell, Mass.; J. Lawrence Riegel, Riegel Paper Corporation, New York. Secretary-treasurer, Thomas J. Burke, 122 East 42nd Street, New York.

Cardboard Manufacturers Association

The Cardboard Manufacturers Association held its annual meeting on Monday, February 15, at the Waldorf-Astoria Hotel, New York, at which the following were elected: president, Malcolm Lowe, Lowe Paper Company, Ridgefield, N. J.; vice-president, Kendall Wyman, Champion Paper and Fibre Company, Hamilton, Ohio.

Chairman, Coated Tag Group, Fred C. Heinritz, Appleton Coated Paper Company, Appleton, Wis.; Chairman, Coated Blank Group, J. A. Moses, Fallulah Paper Company, Fitchburg, Mass.; Chairman, Photo Mount Group, Morris A. Park, Marvellum Co., Holyoke, Mass.; secretary-treasurer, G. D. Cook.

Cover Paper Group

At the meeting of the Cover Paper Group of the Writing Paper Manufacturers Association held on Wednesday, February 17, at the Waldorf-Astoria Hotel, New York, W. W. Langtry was elected chairman of the Group, together with a governing committee consisting of the following: W. W. Langtry, chairman, District of Columbia Paper Mills; M. A. Park, vice-chairman, The Marvellum Company; G. H. Beckett, The Beckett Paper Company; A. E. Frampton, Hammermill Paper Company, and R. H. Morrill, Chemical Paper Manufacturing Company.

A. E. Frampton retired from the chairmanship after having served the last two years.

Newsprint Manufacturers Association

The annual meeting of the Newsprint Manufacturers Association of the United States was held on Tuesday, February 16, at the Waldorf-Astoria Hotel, New York. The following officers were elected:—president, Harold S. Smith, Maine Seaboard Paper Company; vice-president, J. D. Zellerbach, Crown Zellerbach Corporation. Executive Committee members: John L. Hobson, St. Croix Paper Company; E. L. Kurth, Southland Paper Mills, Inc.; Samuel Pruyn, Finch, Pruyn & Co.; and John H. Smith, Hawley Pulp and Paper Company.

R. S. Kellogg was reelected treasurer, and Louis W. Adams, secretary.

Soda Pulp Mfrs. Association

The Soda Pulp Manufacturers Association held its annual meeting on Tuesday, February 16, at the Waldorf-Astoria Hotel, New York. Eustis Paine, president, New York and Pennsylvania Company, was reelected chairman.

Other officers elected were as follows: secretary-treasurer, R. I. Worrell; Amos Hollingsworth vice-chairman. Executive committee: Amos Hollingsworth, Penobscot Chemical Fibre Company; R. I. Worrell, Mead Sales Corporation; Carl Neiswander, Columbian Paper Company, and W. B. Benzing, Champion Paper and Fibre Company.

Groundwood Paper Mfrs. Association

The Groundwood Paper Manufacturers Association held its annual meeting on Wednesday, February 17, at the Waldorf-Astoria Hotel, New York. The following officers were elected: President, E. G. Murray, St. Regis Paper Company, New York; vice-president, E. G. Bennett, Escanaba Paper Company, Escanaba, Mich.; vice-president, P. A. Mahony, International Paper Company, New York; executive vice-president, R. E. Canfield, New York; secretary, E. O. Merchant, 122 East 42nd Street, New York.

Paper Napkin Association

The Paper Napkin Association held its annual meeting on Wednesday, February 17, at the Waldorf-Astoria Hotel, New York, at which the following officers were elected: Chairman—Grafton Houston, Fort Howard Paper Company, Green Bay, Wis.; vice-chairman, R. G. Fairburn, Berst-Forster-Dixfield, Plattsburg, N. Y.; secretary-treasurer, Mark H. Lund, 122 East 42nd Street, New York.

Blotting Paper Mfrs. Association

The Blotting Paper Manufacturers Association held its annual meeting Monday, February 15, at the Waldorf-Astoria Hotel, New York, at which all officers were reelected as follows: president, G. A. Carlton, Standard Paper Manufacturing Company, Richmond, Va.; vice-president, Joseph Hallowell, Wrenn Paper Company, Middletown, Ohio; and Russell L. Winget, secretary-treasurer.

C. E. Roach, Heads Paper Merchants

The National Paper Trade Association of the United States held its Fortieth annual convention at the Waldorf-Astoria Hotel, New York, February 15-18 inclusive. The meeting was largely attended with many important exhibits arranged on the ninth floor.

At the annual meeting on Wednesday, the following officers were elected: president, C. E. Roach, Capital City Paper Company, Springfield, Ill.; vice-president in charge of Fine Paper Division, R. M. Harris, Alling & Cory Co., Rochester, N. Y.; vice-president in charge of Wrapping Paper Division, G. E. Carpenter, Carpenter Paper Company, Omaha, Neb.; treasurer, J. O. Buckley, Bulkley, Dunton & Co., New York; executive secretary, A. H. Chamberlain, 220 East 42nd street, New York.

The featured speakers at the opening session on Monday, included Senator James E. Murray, Democrat, of Montana, and Arthur E. Whiteside, president of Dun & Bradstreet, Inc., New York.

Address of Senator Murray

Senator Murray, who is chairman of the Senate Committee on Small Business, condemned any development now or in the future which would permit further centralization of business, in which case, he observed, the march of bureaucracy is bound to proceed unabated. He stated the following goals by his committee to block business concentrations and monopolies, and to aid small enterprises:

Small business must not be unnecessarily oppressed or discriminated against by competitors possessed of greater financial power; and must not be victimized by unfair business practices.

Small business must not be financially hamstrung by a credit system which caters only to largescale enterprise and neglects interests of smaller groups.

To preserve free competition, anti-monopoly laws must be vigorously and effectively enforced, and every effort must be made to thwart the growth of collectivism.

In all government programs of rationing, price control and the like, the industries to be affected must be consulted first and given an opportunity to present objections against unwise or unnecessary government action.

The expansion of large plants must be stopped and the smaller plants must be used to the fullest possible extent in war work and in essential civilian industry.

C. E. Roach, President

A. H. Chamberlain, Secretary

Address of A. D. Whiteside

Arthur D. Whiteside, president of Dun & Bradstreet, Inc., warned that uncontrolled business booms leading to economic collapse which developed as a result of World War I, must be avoided this time if American free enterprise is to survive.

He advocated decision by Congress on the length of a post-war emergency period and mandatory legislation to obtain stock figures of producing and distributing interest; some form of production control to block excessive consumer goods output and, at the same time, encourage the start of new enterprises; and establishment of non-discriminatory price policies to aid small firms, under which buyers of moderate quantities of merchandise would get approximately the same terms as volume buyers.

Mr. Whiteside emphasized that accountants and auditors now are placing increased emphasis upon inventory position and fully recognize that business failures are few when stocks of goods are low and prices are held to stable levels.

Illustrating the short-sighted policy of favoring one customer against another, he observed that buyers will not forget such discrimination in normal years ahead. Citing results of a survey on the subject just completed by his organization, Mr. Whiteside disclosed that 33⅓% of wholesalers polled, sold available goods only to their best customers and 25 per cent to the best credit risks on their books. Only 15% of replying wholesalers continued in war-time to sell on allocations to all customers based on previous business.

Mr. Whiteside observed that the financial position of the Federal Treasury is now probably less favorable than at the close of World War I, a further ar-

gument "that we should take steps at once to prevent the economic disaster which resulted from the 1914-1918 war.

Address of E. W. Tinker

At the Tuesday session, E. W. Tinker, executive secretary, American Paper and Pulp Association addressed the paper merchants on "Industry Prospects" in part as follows:

Specifically, the industry has applied to itself the spirit and the intent of the Office of Price Administration in its efforts to avoid inflationary trends. This has been accomplished through individual company policies and agreements with the Office of Price Administration and is particularly creditable considering the speculative market that existed for a time through no fault of the industry. The Association's efforts to obtain the adoption of conservation practices that were necessary under the war economy, met with a ready response within the industry. It is obvious that conscious efforts along these lines have represented a very real contribution to the war program. The conservation practices that have been adopted and will continue to be in effect within the industry, I know, have ranged from major items such as the most efficient use of transportation facilities to minor items in mill maintenance and operation. Obviously, not all companies have equal merit in their conservation efforts. However, it can be said without equivocation that the pulp and paper industry and management within the industry is conscious of its responsibilities and is taking action accordingly. It is unnecessary to recite the educational steps that have been taken along these lines but I believe they typify what can be done within even as highly an individualistic industry as the pulp and paper industry.

One of the most difficult problems that the industry has had to face is the idea bandied about in Washington, that paper is a non-essential commodity. As a matter of fact, paper is just as essential to carrying on the war as gun powder or steel. Its lack would bring a complete stop in our essential civilian economy. In a democracy and civilization such as ours, communication, sanitation, education and packaging become as much a part of our daily lives and as essential as the air we breathe. With all business running in high gear, the demand for paper is bound to be large. Thrift in use, is, of course, to be encouraged. Perhaps some minor uses could be eliminated entirely. However, the relative tonnage involved will be found to be small indeed.

Much has been said of the industry's use of power, man power, critical materials and transportation. Most of these statements have been made without consideration of the facts. As a matter of fact, the paper industry is a large producer of its own power, producing 67% for its own use as compared with an average of 40% for all other industries. The primary pulp and paper industry has a larger capital investment per employee than any other industry except the chemical industry. It is a relatively small employer of labor. It is highly mechanized and its skilled employees and craftsmen are not peculiarly valuable to other industries. No critical materials are used as furnishes in the manufacture of paper products. Critical metals used in paper mill machinery are salvagable, bringing actual consumption almost to the vanishing point. Our use of transportation facilities is large. The elimination of hold-over time as well as cross-hauls and maximum car loading is essential. These things the industry must accomplish. Grandiose plans for the concentration of the pulp and paper industry have been suggested or at least discussed. I have every confidence that careful consideration of geographic location, essentiality of products produced, and the gains that would result will indicate that only to a most limited degree would the effectuation of such plans contribute anything to the war program.

Benjamin A. Javits Speaks

Primarily by means of the trade association through which an articulate and united front can be presented, can industry help to insure victory in war and in peace, since peace requires preparedness just as does war, Benjamin A. Javits declared in an address Wednesday to the Annual Convention of the National Paper Trade Association of the United States meeting at the Waldorf Astoria.

The last peace and hence the last war was lost on the home front, according to Mr. Javits, attorney, author and economist of New York and Washington, who is counsel to the Association and Chairman of the Post War Economic Planning Committee of the American Business Congress.

Four things are required to win a war and to win the peace, according to Mr. Javits: organization, toughness of fiber, a sense of decency and fairness and, most vital of all a plan. The need of the future, he stressed, is more organization, not less—stronger organization, not weaker, and this makes it more essential than ever before that every business stand by and with an organization—an association.

The home front after the war will have a new meaning, he asserted, since the home front will be the orbit around which the whole world will resolve. "We American business men want certainly for every Hottentot not only to have a bottle of milk," writing paper and all other kinds of paper but also want to create the kind of world where they will be able to purchase these things, he stated.

Pointing out that the realm of the trade association is for practical purposes a 49th state, he continued: "The National Paper Trade Association as far as you are concerned and for the purposes of this discussion is a part of the American nation. You must take your rightful place and meet your full responsibility. And you must give and give until it hurts. If you do that this trade association will return to you more than you ever dreamed was possible as practical and hardheaded business men. I urge upon you to contribute in every way that you possibly can to the effective functioning of this organization so that it through you can win the victory by making its full contribution toward winning the peace."

Bristol Board Group

At the meeting of the Bristol Board Group of the Writing Paper Manufacturers Association held on Monday, February 15, at the Waldorf-Astoria Hotel, New York, H. W. Tunstall was elected chairman of the Group, together with a governing committee consisting of the following:

E. W. Tunstall, chairman, Wheelwright Papers, Inc.; Kendall Wyman, Vice Chairman, Champion Paper and Fibre Company; Norman Harrower, Linton Brothers & Co.; J. E. Holmes, Chemical Paper Manufacturing Company; and R. M. Swaney, Franklin Paper Company.

J. E. Holmes retired from the chairmanship after having served two years.

Technical Association Features War Effort

Ralph A. Hayward, President Kalamazoo Vegetable Parchment Co. Reelected President—Prentiss Brown, Administrator OPA, Speaks at Luncheon—Harry Fletcher Awarded TAPPI Medal.

The pulp, paper, and paper board engineers, executives and chemists, voting on the officers to lead them during this second year of World War II, reelected Ralph A. Hayward, President and General Manager of the Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich., to serve another year as president of the Technical Association of the Pulp and Paper Industry at its 28th annual convention February 15-19 at the Hotel Commodore, New York, N. Y. To serve with Mr. Hayward, Vance P. Edwardes was reelected vice president. Mr. Edwardes is sulphite superintendent of the International Paper Company, Palmer, N. Y.

Albert Bachmann, vice president of the Missisquoi Paper Company, Sheldon Springs, Vermont; J. D. Malcolmson, Technical Director of the Robert Gair Company, Inc., New York, N. Y.; Paul Hodges, Assistant General Manager of the Crossett Paper Mills, Crossett, Arkansas; and A. E. Montgomery, Vice President and Western Manager of J. O. Ross Engineering Corporation, Chicago, Illinois, were elected to serve three years on the Executive Committee. R. G. Macdonald is Secretary-Treasurer of the Association, with headquarters at 122 E. 42nd Street, New York, N. Y.

R. G. MACDONALD
Secretary-Treasurer

Dominant Note of the Convention

The dominant note throughout the Convention was the place of TAPPI in the war effort. All the sessions contained one or several papers connected with this topic and the closing session, which was the Annual Luncheon on Thursday afternoon was featured by an address by Prentiss M. Brown, administrator of the OPA. The TAPPI medal for outstanding contributions to the technical progress of the industry was presented also at this session to Harry Fletcher, president of the Fletcher Paper Company.

The association is devoting its tremendous technological resources to assist manufacturers of the industry, converters, and users of paper products, including the War Department and other government agencies, in problems related to the war effort. In this connection a splendid exhibit, under the direction of Vincent F. Waters, technical assistant to the secretary of TAPPI, was made at the convention. This exhibit is described at considerable length elsewhere in this issue.

R. A. HAYWARD
President

V. P. EDWARDES
Vice President

President's Address

R. A. Hayward, president of the association, delivered his address at the opening session of the convention as follows:—

We have completed one year of active participation in the war. The Pulp, Paper, and Paper Board Industry has changed from a civilian supply industry to one which is now recognized as highly essential to the war program. Much of the responsibility for this change has rested on the shoulders of the technical men within the industry. Never before have they put forth such a concerted effort; never before has so much been accomplished. Dozens of men in every plant have devoted their time to the changing of processes and products in order to produce materials required for the prosecution of the war.

In the beginning of the year, great efforts were made in the conservation of critical materials. Many of the technical men of the industry, together with the staff of the Technical Association, prepared literature to be distributed among the operating men, pointing out ways and means of conserving and maintaining material and equipment.

The association prepared and distributed two monographs—one entitled "Industrial Water for Pulp, Paper, and Paperboard Manufacture;" the other entitled "Saving Fourdrinier Wires." The latter has been helpful in the conservation of copper for prolonging the life of Fourdrinier wires.

Other technical men of the industry have served on innumerable committees, preparing limitation recommendations on critical chemicals and supplies.

Others within the industry have devoted their entire time to the development of new paper products which are successfully substituting for critical metals in the packaging and preservation of materials of war.

The association has contributed much in the way of supplying information and technical assistance, which has helped to coordinate and direct these efforts.

The fall meeting of the association was held in Boston. It was one of the most constructive meetings that has ever been held, and the program was devoted almost exclusively to papers and discussions covering the use of paper products for military purposes and essential needs. It was very well attended and the results of the discussions have been far-reaching in helping to promote the service of the pulp, paper and paper board industry.

The New England Section of TAPPI deserves a great deal of credit for making all of the arrangements for these meetings. They arranged an exhibit showing the application of paper products for war uses.

At the executive committee meeting in Boston, much of the time was devoted to discussing ways and means of still further improving the service of the association in helping to spread further information about the requirements of the war program and to stimulate further thinking on the development of new products. As a result of these discussions, it was decided to establish a War Bulletin Service which would collect and disseminate information to all members of the association, which would be of assistance to everyone in their individual problems.

The executive committee appropriated sufficient funds from the association to cover the cost of this service. As you know, these Bulletins, known as the *TAPPI Bulletin*, are now going out at regular intervals. This service has been recognized as a very constructive contribution to the war program.

During the year there have been many new members added to the association, which is evidence in itself of a full appreciation of the service the association is rendering.

Many of our members have entered the armed services and have temporarily dropped their memberships in the association. With all of these changes, there has been a small net increase in membership.

The industry today is recognized as essential. The claimant agencies of the government estimate that the military and essential civilian needs will be even greater than the available supply of paper and paper board products. The supply will be limited to the raw materials that are available for production. The pulp supply will be reduced during the current year, due to a shortage of wood in all sections of this country and Canada. This shortage has developed because of a shortage of labor in the woods.

The shortage of pulp may approach a critical stage before the end of this year. Because it is evident that the pulp supply will not produce even enough paper products to meet the essential and military needs of the country, curtailment orders have been issued, limiting the production of various grades of paper and eliminating nonessential uses. It is probable that there will be further limitations as the year progresses.

Many new uses of paper are being developed at the present time, which will be classed as essential and will replace less essential civilian uses. Unquestionably, this extensive change within the industry will continue until the end of the war.

The association will continue to contribute all of its services and resources in helping with this parade of progress, and it is the spirit of the organization to give everything it has to help the pulp, paper and paper board industry make its maximum contribution to the war program.

Report of the Secretary-Treasurer

The Technical Association of the Pulp and Paper Industry in 1942 found itself confronted with many problems brought about by the war.

Membership

Since many members of the Association held Officers Reserve Corps commissions it became necessary for them to enter the armed services. Some have resigned their membership, while others have continued. Many others have joined various branches of the service and entered other industries for the duration. At the same time the great responsibility of the industry to produce products to replace more critical materials has led to a large influx of new members from industries that convert paper and use it for packaging purposes.

There were 199 individual members elected in 1942. One hundred fifty-nine members resigned or were dropped. On December 31, 1942, the total individual membership was 1907.

There were 10 corporate and eight sustaining members elected. Two corporate and two sustaining members were dropped. The corporate membership on December 31, 1942, was 95 and the sustaining membership was 97.

The following companies became corporate members in 1942:

St. Marys Kraft Corporation, St. Marys, Ga.
Peter J. Schweitzer Company, Elizabeth, N. J.
Thilmany Pulp and Paper Company, Kaukauna, Wis.
Keyes Fibre Company, Waterville, Maine.
Container Corporation of America, Chicago, Ill.
W. R. Grace & Co., New York, N. Y.
South African Pulp and Paper Industries, Ltd., Transvaal, South Africa.
North Carolina Pulp Company, Plymouth, N. C.
Bloomer Brothers Company, Newark, N. J.
Continental Paper Company, Ridgefield Park, N. J.

The following companies have become corporate members for 1943:

Clyde Paper Company, Rutherglen, Scotland.
Associated Pulp and Paper Mills, Ltd., Melbourne, Australia.
Brasital, S. A., Sao Paulo, Brazil.

The following companies became sustaining members in 1942:

Anheuser Busch, Inc., St. Louis, Mo.
The Dicalite Company, New York, N. Y.
Valley Iron Works, Appleton, Wis.
Quigley Company, New York, N. Y.
A. M. Meincke Company, Chicago, Ill.
Hooker Electrochemical Company, Niagara Falls, N. Y.
William R. Barrell Company, Lawrence, Mass.
Nichols Engineering and Research Corporation, New York, N. Y.

The following companies have become sustaining members for 1943:

Nash Engineering Company, New York, N. Y.
Appleton Machine Company, Appleton, Wis.
Draper Bros. Company, Canton, Mass.

Necrology

The Association lost through death the following members:

W. H. Artz
Stephen Beard
G. S. Brazeau
W. S. Crocker
Olaf Hedstrom
E. O. Hemstreet
V. G. Heinmuller
A. H. B. Jordan
Edward G. Lunn
Charles McDowell
W. A. Nivling
August F. Richter
John C. Sherman
Dr. Fritz L. Strauss
Homer F. Ziegler

Special Reports on Manufacturing Problems

In its day by day activities the Association through its regular correspondence obtains and sends out to inquirers a large amount of technical and other information. When the nature of an inquiry requires a survey of the industry to obtain comparative data the results are compiled in the form of Special Reports. In 1942 the following were issued:

No. 321—The Colloidal Properties of Aqueous Dispersions of Fillers
322—Felt Washing and Breaking-In Procedure
323—Starch-Coated and Waterleaf Papers for Offset Printing
324—Bleaching Plant Paints
325—Packing Materials in Sulphate Pulp Mills
326—Handling Baled Dry Pulp
327—Paper Roll Cores

Employment

The Association has functioned effectively for many years as an employment clearing house. Until 1942 there were always more men than jobs available. Currently the jobs outnumber the men and this condition will undoubtedly prevail until the war has ended. In the past fifteen years several hundred executives, chemists, engineers and mill superintendents have obtained positions through the medium of the TAPPI employment service. No service charge has ever been made and it is hoped that both companies and members will be able to get together through this important Association service.

Fall Convention

The fall meeting of the Association was held in the Statler Hotel, Boston, Mass. There were about 1000 in attendance, a number much larger than expected. The large attendance was evidently due to the great wave of interest in packaging and new paper products to meet the growing shortages of other materials. An unusually large number of nonmembers were present and also reflected the severity of the war problems. Norman F. Bearse of the Champion-International Company was general chairman and was assisted by an enthusiastic and capable convention committee. A feature of the convention was an exhibit of wartime paper products which occupied the entire mezzanine of the Statler. It was of great value as an indication of the trends in container construction and was highly colorful as paper exhibits usually are.

Research Promotion

Only one project received financial support in 1942. This was a grant of $650.00 to the Fundamental Research Committee for Research Project No. 21 for a study by Prof. C. B. Purves of Massachusetts Institute of Technology on the Oxidation of Cellulose.

Publications

Each member received the following publications as in previous years: Bibliography of Papermaking and U. S. Patents (April) (204 pages); Technical Association Papers (July) (83 pages); TAPPI Year Book (November); TAPPI Standards; TAPPI Data Sheets; Papermaking Abstracts (270 pages), and the Paper Trade Journal (weekly). New members received Loeschbrandt's Bleaching of Sulphate Pulp (71 pages).

The Lockwood Trade Journal Company continued to assist the association through the publication of papers in the Paper Trade Journal. The association is indebted to H. J. Berger, Editor, for his sympathetic assistance in many publication matters and to George S. Macdonald for his general support and financial contribution to Technical Association Papers.

Clarence J. West again did an excellent job in preparing the Bibliography of Papermaking and much of the Papermaking Abstracts.

Paper—The Lifeblood of Civilization

All members also received an unusually interesting and instructive 24 page illustrated booklet entitled "Paper—The Lifeblood of Civilization." This booklet was distributed as a contribution to the much needed good public relations program of the industry. More than 70,000 copies were distributed.

Monographs

The first two monographs on technical subjects were issued during the year. The first was entitled *Industrial Water for Pulp, Paper, and Paperboard Manufacture* (144 pages). It was a product of the TAPPI Water Committee under the chairmanship of Lewis B. Miller. The second was entitled *Saving*

Fourdrinier Wires (21 pages) and was prepared for the Association by J. E. Goodwillie of the Beloit Iron Works. Both were reviewed by a number of authorities before being issued by the Association. The second monograph was a contribution to the war conservation program.

TAPPI Bulletin

Beginning in November the Technical Association initiated a new service through the TAPPI Bulletin, a publication (4-8 pages) that has been appearing about twice a month since its inception. This is essentially a war service to assist the industry and its customers meet the gigantic problems derived from the war requirements. The main problems consist of the development of new containers and packaging materials required by the armed forces and by civilians to replace such critical materials as metals, rubber, etc. In addition to sending these to all members they have been made accessible to a large number of paper converters and packagers. They include feature articles describing war time paper and container industry activities, new testing methods, new paper packages clearing house, specifications and abstracts of trade paper literature relating to packaging. Other feature subjects of immediate application are also covered.

Local Sections

No new local sections were organized during the year. The present sections include the New England, Empire State, Delaware Valley, Kalamazoo Valley, Ohio, Lake States and Pacific Sections. In addition there is a group of TAPPI members sponsoring a proposed Maine-New Hampshire Section and a group of members of TAPPI and the Superintendents Association are supporting the Papermakers and Associates of Southern California. No meetings of the Southern Pulp and Paper Club were held during the year.

Wartime Activities

The major activities of the Association are being directed toward the solution of wartime problems.

Early in the year the secretary endeavored to raise a fund to help finance the study of packaging of dehydrated foods being carried on at the New York Agricultural Experiment Station at Geneva, N. Y. The funds collected are being used for this important work.

The staff of the association did considerable work for the War Production Board in obtaining information of immediate value to the War Time Machine Shop Board.

The staff also assisted the American Paper and Pulp Association War Conservation of Materials Service by preparing a number of bulletins to show how the life of equipment and materials could be extended by care and by substitution.

In June the Secretary organized a meeting at the Stevens Hotel in Chicago to assist Major Charles Herman and the Subsistence Research Laboratory of the Chicago Quartermaster Depot in establishing means of evaluating the new paper ration containers. About 175 attended this meeting and constituted a remarkable cross-section of all of the interests needed to do this important job.

Throughout the year the Secretary has been in constant touch with many units of the armed services, assisting them on numerous technical matters.

The secretary cooperated with the "Bridgebuilders," a group that broadcast over the short wave of the British Broadcasting Company, and sponsored by the Papermakers Association of Great Britain and Ireland to encourage correspondence between British and American papermakers throughout the war period.

To assist the War Production Board establish a basis for limiting chlorine consumption the Association developed a standard procedure for measuring the brightness of pulp and paper. Members of the association gave considerable time to this and other W.P.B. activities.

Institute of Paper Chemistry

The Association made a special financial contribution to the building program of the Institute of Paper Chemistry at Appleton, Wis. There has been a high degree of mutual cooperation between the Association and the Institute since the latter was founded.

Divisions and Committees

War and civilian problems have taken up the greater part of the attention of all Association members and has been reflected in the activities of some of the Committees of the Association. The Testing Division and the Converting and Consuming Division have been unusually active since these groups have been called upon to meet the major engineering problems that have arisen. These activities have been reflected in the large number of standard testing methods that have been adopted and in the meeting programs which have emphasized the need for packaging research and development. The following outline will be limited largely to personnel changes in the divisional structure during the year:

Engineering Division, W. G. MacNaughton, Newsprint Service Bureau, General Chairman. The only personnel change was in the *Heat Utilization in Chemical Processes Subcommittee* in which W. T. Webster of the Brunswick Pulp and Paper Company replaced J. W. Ogden of the Foster-Wheeler Company. The other chairmen are: *Heat and Power Committee*—Roderick O'Donoghue, Consulting Engineer; *Drying, Heating and Ventilating Subcommittee*—A. E. Montgomery, J. O. Ross Engineering Company; *Production and Transmission of Power Subcommittee*—E. F. Burns, International Paper Company; *Materials of Construction Committee*—J. A. Lee, Chemical & Metallurgical Engineering; *Packing Materials Subcommittee*—J. W. Hemphill, Johns-Manville Company; *Piping and Tubing Materials Subcommittee*—S. B. Jones, West Virginia Pulp and Paper Company; *Water Committee*—L. B. Miller, W. H. & L. D. Betz.

Industrial Division, H. H. Hanson, W. C. Hamilton & Sons, General Chairman. There were no changes in personnel. The chairmen are: *Fibrous Raw Materials Committee*—John Traquair, Mead Corporation; *Nonfibrous Raw Materials Committee*—E. N. Poor, W. C. Hamilton & Sons; *Industrial Engineering Committee*—J. R. Atwater, Office of Price Administration; and *Vocational Training Committee*—W. L. Cassiday, Hummel & Downing Company.

Converting and Consuming Division, A. W. Nickerson, Consulting Engineer, General Chairman. There were no chairmanship changes. They include: *Coating Committee*—J. D. Davis, Dill & Collins, Inc.; *Container Committee*—J. D. Malcolmson, Robert

Gair Company; and *Graphic Arts Committee*—M. S. Kantrowitz, Government Printing Office.

Research Development Division, D. W. McCready, University of Michigan, General Chairman. There were no changes. C. J. West, Institute of Paper Chemistry, R. P. Whitney, Massachusetts Institute of Technology, H. F. Lewis, Institute of Paper Chemistry, Allen Abrams, Marathon Paper Mills, and C. W. Rivise, Caesar & Rivise, continued as chairmen of the *Abstracts and Bibliography, Engineering Research, Fundamental Research, Bacterial Control Methods*, and *Patents Committees*, respectively.

Pulp Manufacture Division, S. D. Wells, Institute of Paper Chemistry, General Chairman. Henry Perry, J. P. Lewis Company, succeeded R. F. Huntley, Sealright Corporation, as chairman of the *Mechanical Pulping Committee*. D. C. Porter of the Kimberly-Clark Company succeeded H. A. Du Bois of the same company as chairman of the *Acid Pulping Committee*. Paul Hodges and D. T. Jackson continue as chairmen of the *Alkaline Pulping Committee* and the *Pulp Purification Committee*, respectively.

Paper Manufacture Division, Pierre Drewsen, Hinde & Dauch Paper Company, succeeded G. Lamont Bidwell, Jr., Riegel Paper Corporation, as General Chairman. The *Forming and Finishing* and the *Stuff Preparation Committees* were merged to form a *Papermaking Committee* under the chairmanship of A. E. Bachmann of the Missisquoi Corporation. C. M. Connor of the Valley Forge Laboratories, continued as chairman of the *Preparation of Nonfibrous Materials Committee*.

Testing Division, Major J. d'A. Clark, Subsistence Research Laboratory, Q.M.C., General Chairman. Major Clark also assumed temporarily the chairmanship of the *Pulp Testing Committee*. One new committee was organized—*Container Testing Committee*, A. W. Nickerson, Chairman. B. E. Lauer, Chemical Warfare Service, W. F. Hathaway, Kalamazoo Vegetable Parchment Company, B. L. Browning, Institute of Paper Chemistry, F. W. Bentzen, Kimberly-Clark Corporation, M. N. Davis, Kimberly-Clark Corporation, and B. W. Scribner, National Bureau of Standards, continued as chairmen of the *Fibrous Materials Testing Committee, Nonfibrous Materials Testing Committee, Chemical Methods Committee, Microscopy Committee, Optical Properties* and *Paper Testing Committees*, respectively. In the *Paper Testing Committee* S. C. Fairbanks, E. J. Albert and P. W. Codwise continued as chairmen of the *Absorptiveness to Paraffin, Testing Instruments* and *Writing and Erasing Properties Subcommittees*, respectively.

Miscellaneous Committees—R. A. Hayward, Kalamazoo Vegetable Parchment Company, R. C. Griffin, Arthur D. Little, Inc., E. W. Tinker, American Paper and Pulp Association, J. L. Parsons, Hammermill Paper Company, and George Carruthers continued as chairmen of the *Finance Committee, Standards Committee, Certified Pulp Testers Bureau, Research Appropriation Committee*, and the *Joint Textbook Committee*, respectively.

TAPPI Exhibit at Commodore Visualizes Paper at the Battle Front

Machine guns, tank parts, airplane engines, fire control instruments, and food for shipment to the battlefronts of the world were a part of the dramatic and comprehensive "Paper Prevents Battlenecks" exhibit of the Technical Association of the Pulp and Paper Industry at the Hotel Commodore, New York, N. Y., February 15-18, 1943.

Vincent F. Waters, technical assistant to the secretary of TAPPI and director of the exhibit, stated that the display was the most comprehensive exhibit of the part played by engineers, chemists, and other technologists in helping the Army Quartermaster, Ordnance, Air Forces, Engineers, and the Navy solve protection problems in relation to transport of war planes, guns, tanks, parts, etc., necessary to battle and victory.

War Department Exhibit

S. G. Somers, exhibit director of the War Department, set up a large display of many ordnance, engineer, and quartermaster supplies showing the proper method of wrapping and packaging for transport to the battlefronts of the world. Machine guns, small arms, ration containers, camouflage, chemical warfare material, projectile containers, were a part of this display. "You pack 'em well, we'll give 'em Hell," is Army theme.

In the U. S. Army exhibit was portrayed the correct protective methods of packaging Army material and the incorrect ways. Using the proper protective paper and paper board materials, material for the battlefronts arrive in condition to be placed in immediate use. According to Lt. Col. James Spencer, U. S. Army Engineers, battlefront materials are useless if they are received rust coated and damaged in any other way.

The scientists and technologists of the Technical Association are working diligently with every branch of the War Department in solving problems of protecting materials for the battlefronts.

Metal and Rubber Saving

Airplane parts fabricated from plastic with a paper base; oil and grease drums of various capacities; blood plasma containers for the hospitals and first-aid stations on the battlefronts; paper-base plastic machine parts; grease and oilproof paper, bags, and boxes; projectile containers and small arms ammunition boxes were among the many items displayed for the purpose of giving ideas to engineers, chemists, and designers of the many companies involved in the manufacture of protective wrappers and containers for the War Department, Navy Department, and Lend-Lease.

The "home front" was not neglected. This was amply demonstrated by the many types of bags, folding boxes, drums, and other containers for food, tobacco, oil, grease, wax, candy, cosmetics, toiletries,

and many other items used by civilians as well as the armed forces.

Many of these items formerly were made in major part from rubber and metals which is now the problem throughout the country to conserve.

"Keep the Presses Running" was the theme of Sinclair & Valentine Company's display showing the Graphic Arts aid to the war effort by the use of color. This display showed the power of color, emphasis of color, color builds morale, color for necessities, color is life, and color brings victory nearer.

The possibilities in the use of pulp, paper, and paper board are not generally known, yet they are probably the most versatile materials available in large quantities to relieve the drain on the nation's stockpile of critical metals. Many of the problems are rather well-defined, but the solutions of the problems are not always simple. The exhibit indicates the accomplishments in relieving the critical material shortages and serves to give designers, engineers, and operators ideas to conserve more metals, shipping space and weight in the development of more specific uses in the war effort. The exhibit was impressive in the variety, complexity, and effectiveness of the work done in developing new and extending many old uses of pulp and paper.

Some of the uses in which pulp, paper, and paper board are now being utilized are considered as war expedients. The end of the war will find many of these uses firmly established as entirely satisfactory permanent uses for these products because of the protection afforded goods in shipping, effective direct labeling, reduction in shipping space and weight, and low cost of the containers, packages, and wrappings.

R. G. Macdonald, Secretary of the Association, states that TAPPI has devoted much of its time and activities to the victory of the United States and United Nations, and in harmony with the past year, will continue this work.

The following concerns were represented in the exhibit:—

American Can Company

Paper board cans for packaging various materials.

American Viscose Corporation

Textile products manufactured from regenerated cellulose from sulphite pulp; American Flag; undergarments for WAACS; Army overseas caps; lint-free wiping cloth used by Army and Navy for range finders, binoculars, periscopes, fire control instruments; shroud cords for fragmentation bomb parachutes; fabric used in Naval mine laying parachutes; fabric used in work clothing; tape used in aerial delivery parachutes; fabric used for aerial two targets used for aerial gunnery practice; fabric used for flare parachutes; fabric used in fragmentation bomb parachutes; fabric used in cargo parachutes; acetate rayon fused tape (military use confidential); horsehair and spun rayon interlining material for Army and Navy uniforms; rayon cord used for bomber, transport and fighting plane tires to withstand the impact of high speed, landing shocks, and to save rubber.

Other uses for rayon from regenerated cellulose from sulphite pulp include self-sealing gasoline tanks, extra strength tire cords, Army chevrons and insignia, electric wire covering for ships, tanks and planes, water-repellent, paulin cloths for protecting airplane motors, flags and pennants, and mosquito netting.

Arkell Safety Bag Company

Paper sand bag for Army of laminated wet-strength kraft paper, replacing burlap; baling wrapper of laminated wet-strength paper, replacing burlap.

Beech-Nut Packing Company

Paper folding boxes for Army rations, malted milk and dextrose tablets, and malted milk tablets for Army.

Bigelow-Sanford Carpet Company

Paper shipping containers for carpets and rugs, replacing burlap.

Bird & Son, Inc.

Corrugated form used for molding synthetic rubber fuel tank for U. S. Rubber Company; weatherproof fiber shipping case for main section of twin airplane engine for Pratt & Whitney Division of United Aircraft Corporation; weatherproof fiber shipping case for airplane propeller shaft for Pratt & Whitney Division of United Aircraft Corporation; wood frame fiber apple box; and several grades of weatherproof solid fiber boxes.

Brown & Williamson Tobacco Corporation

Spiral wound paper board tobacco containers for Sir Walter Raleigh, Big Ben, Target, Bugler, in various sizes; also folding paper boxes for tobacco in pocket size; all replacing metal containers.

Bryant Paper Company

Containers for Johnson & Johnson baby powder in various sizes; Calox tooth powder in two sizes; Listerine tooth powder in two sizes; Dr. Lyon's tooth powder with plastic dispenser and molded paper top; Pepsodent in small size; Avon Products smoker's tooth powder; Clark-Cleveland small-size Fasteeth; Dorothy Gray, Avon, Ayer, Doggett-Pfeil, Arden, and Tussy lipsticks; Mennen's men's talc and borated talc; Prophylactic tooth powder, large size; Plough's St. Joseph cold tablets; Plough's aspirin, anacin, and certified aspirin; jar caps for mayonnaise and tobacco jars; powder compact; cartons for Union Leader, Briggs, and St. Leger tobacco; replacing metal in all cases.

Carpenter Container Corporation

5-gal. special fiber shipping drum for water solutions; 15-gal. special fiber shipping drums for greases; 22-gal. special fiber shipping drums for sodium hydrosulphite; 30-gal. special fiber shipping drums for Thickol synthetic rubber; 51-gal. special fiber shipping drums for semiliquids and dry products; all replacing metal for Army, Navy, Lend-Lease, Industry, Foods, Dairy products, drugs, chemicals, cosmetics, oils, paints, varnishes, and tobacco products.

Casein Company of America

Casein base adhesives for water resistant sealing of fiberboard.

Coast and Geodetic Survey, U. S. Dept. of Commerce

Special maps for Sea and Air navigation.

Colgate-Palmolive-Peet Company

Containers for Colgate tooth powder; tubes for Colgate dental cream; replacing metal.

Consolidated Water Power and Paper Company

Aircraft parts fabricated by McDonnell Aircraft Company from paper laminate.

THE CONTAINER COMPANY

Fiber drum for shipment of cyanide in 30-gal. size; Leverpak 51-gal. fiber drum for shipment of munitions, chemicals, drugs, food, etc.; Fiberpak 5-gal. drum with inner lining of cellulose acetate for shipment of various items as listed under Leverpak above; all replacing steel drums.

CROSS PAPER PRODUCTS CORPORATION

Various tooth powder, spice, disinfectant and toiletry containers with swing sifter feature.

THE DOBECKMUN COMPANY

Various types of paper and paper board packages and containers for replacing metal.

ELMER CANDY COMPANY, INC.

Various spiral wound containers made by Sealrite for candy, peanut flakes, and cheese snacks with wax coating, replacing metal containers.

EX-LAX, INC.

Paper and paper board packages and containers replacing metals for medicinal products.

FIBRE DRUM COMPANY

Steelkraft drums for packaging of cup grease.

FOOD INDUSTRIES MAGAZINE

Various containers, bags and packages of dehydrated foods.

ROBERT GAIR COMPANY, INC.

Various folding cartons, boxboard, fiber, and corrugated shipping containers.

GARDNER-RICHARDSON COMPANY

Various folding cartons and paper board shipping containers and packages.

GAYLORD CONTAINER CORPORATION

Drumpak, corrugated boxes, which may be shipped knocked down flat and readily assembled as needed, to replace metal.

GENERAL CELLULOSE COMPANY, INC.

Cellulose wadding; wadding molds; tablet packages; cosmetic packages and containers; and other products for the armed forces.

GENERAL MILLS, INC.

Wheaties "Yank Pack" cartons for the armed forces.

GENERAL PRINTING INK COMPANY

Various graphic arts posters for aiding the war effort.

HAWTHORNE PAPER COMPANY

Blueprint and negative paper.

HILL PACKING COMPANY

Various sizes of waxed cups, replacing metal for the shipment of meats and other food.

THE HINDE & DAUCH PAPER COMPANY

Various sizes and kinds of corrugated and solid fiber boxes for the shipment of various civilian and war materials.

INTERCHEMICALS CORPORATION

Various graphic arts posters for the war effort.

THE INTERSTATE FOLDING BOX COMPANY

Prefabricated automatic partition—including containers for packaging small arms ammunition used by the U. S. Army Ordnance Department; heat sealable thermoplastic laminated films called "thermoplane" in various forms, and specifications for bags and box liners for frozen eggs, powdered milk, sweetened condensed milk in fluid form, and other food products, replacing metal.

H. A. JOHNSON

Corrugated Fiber Drum for asphalt and resin.

JOHNSON & JOHNSON

Various drug containers for baby powder, first-aid kits, adhesive plaster, etc.; replacing metal.

KALAMAZOO TWISTING COMPANY

Specialties from twisted papers.

KALAMAZOO VEGETABLE PARCHMENT COMPANY

Special containers, map paper, and material for camouflage.

KEYSTONE ENVELOPE COMPANY

Non-metallic binders for sheaves of letters and other documents.

KEYSTONE ROOFING MANUFACTURING COMPANY

Kraft waterproof papers.

KIMBERLY-CLARK CORPORATION

Kimpak, and cellulose wadding for protection of material in transit.

KUPFER BROTHERS COMPANY

Moistureproof, waterproof and greaseproof papers.

LARUS AND BROTHER COMPANY, INC.

Edgeworth tobacco Seal-Pak pouches, replacing metal.

LEDERLE LABORATORIES

Various packages and containers for drugs; blood plasma; normal serum albumen "human."

LEE PAPER COMPANY

Blueprint and drawing papers.

LILY TULIP CUP COMPANY

Integrated lunch tray of paper with openings for dishes, coffee cup, fork and spoon, for use in war plants.

MARATHON CHEMICAL COMPANY

Various lignin plastic products.

MARATHON PAPER MILLS

Army ration packages, munition packages, cigarette overwrap, and other similar items.

MCKESSON & ROBBINS, INC.

Various types of drug containers with special sifting device; folding paper boxes for other products.

MENASHA PRODUCTS COMPANY

Egg packages of various sizes and types; powdered skimmed milk of various sizes; cocoa beverage bags, and other similar products.

MICHIGAN RESEARCH LABORATORIES, INC.

Printed samples of paper.

MODERN PACKAGING MAGAZINE

Various paper and paper board containers, packages, replacing metal and glass.

MONO SERVICE COMPANY

Hot food cups, glue pots, and various other paper containers used by the armed forces and civilians.

MONSANTO CHEMICAL COMPANY

Various plastic products used on a paper basis.

MULTAZO COMPANY

Direct process photoprint papers.

MUTUAL PAPER COMPANY

Special paper bags of the waterproof type.

MYLES SALT COMPANY

Paper packages for table salt.

NATIONAL ASSOCIATION OF PRINTING INK MAKERS

Various graphic arts posters for the war effort.

NATIONAL ASSOCIATION SERVICE

Victory recipe file of paper and paper board, replacing metal.

NATIONAL BISCUIT COMPANY

Various paper board containers with paper labels, replacing tin plated cans.

OLD DOMINION BOX COMPANY

Paper boxes and packaging material for various packaging requirements, replacing metal.

OXFORD FILING SUPPLY COMPANY

Paper board desk trays and waste baskets, replacing wood and metal.

PAPER SHIPPING SACK MANUFACTURERS ASSOCIATION

Comprehensive display of bags, replacing metal drums.

"QUICKUT" HOME-PAPERS

New roll wax paper package of reduced size, conserving metal in the cutting edge.

F. A. READ, INC.

Various custom made bags with waterproof liners for war industries; automobile storage covers; mattress bags; and various types of shipping carriers, replacing metal and protecting materials.

REYNOLDS METALS COMPANY

Life boat and emergency ration envelopes utilizing kraft paper; waterproof canister labels for Shoup-Owens, Inc.; envelopes of kraft paper for Navy sulfadiazine tablets for Ivers Lee Company; waterproof bag for Quartermaster Corps for bulk package spaghetti; plaster of Paris bandage for Army Medical Corps; dehydrated soup package for Army Quartermaster Corps; dehydrated vegetable package for Army Quartermaster Corps; waterproof match bag for American Red Cross, Bundles for Britain, Army and Air bases, etc.

THOMAS M. ROYAL COMPANY

Flav-O-Tainer cellophane lined bags and thermotop heat sealing bags for the Army, Navy, Lend-Lease, etc.

SINCLAIR & VALENTINE COMPANY

A display showing the graphic arts aid to the war effort by the use of color.

SISALKRAFT COMPANY

Various kinds of waterproof bags and boxes.

SOCONY-VACUUM OIL COMPANY

Barrel with paper body and metal heads for shipping wax; ration packages for Armed Forces which have been taped in wax; laminated glassine paper used for Ration K and D, and wrapping of waxes; 1-qt. paper container for packaging motor oil.

SUNOCO PRODUCTS COMPANY

Various containers developed for Colgate-Palmolive-Peet Company for tooth and talcum powders.

SOUTHERN PULPWOOD CONSERVATION ASSOCIATION

Methods of cutting pulp wood; models of forest in need of cutting; the same forest after clear cutting, after seed tree cutting, and after selective cutting.

STECHER-TRAUNG COMPANY

Paper board container lined with cellophane for Friend Brothers frozen baked beans; Victory dehydrated food package.

THILMANY PULP AND PAPER COMPANY

Greaseproof, waterproof, and other similar paper products.

C. E. TWOMBLY COMPANY

Fluted paper cups of various sizes and shapes for confectionery and bakery products; fluted paper liners of various sizes; die cut paper and paper board specialties.

UNITED DRUG COMPANY

Various sample containers for drugs.

WAR DEPARTMENT—BUREAU OF PUBLIC RELATIONS

A large display booth with internal lighting showing samples of boxes, cartons, and other such material used by the Arms and Services of the U. S. Army. Included also were machine guns, field pieces, munitions, and other ordnance and engineering material wrapped in paper and packed in paper board containers.

WAR DEPARTMENT—CAMOUFLAGE DIVISION

Paper-garnished camouflaged net.

WESTINGHOUSE ELECTIC AND MANUFACTURING COMPANY

Airplane parts and other material made from paper-base plastic.

WRENN PAPER COMPANY

Blotters lithographed with a war message.

Simplified Practice for Fungicide

Printed copies of Simplified Practice Recommendation R41-42, Agricultural Insecticide and Fungicide Packages, are now available according to an announcement of the Division of Simplified Practice, National Bureau of Standards.

The original recommendation, promulgated in 1926, established a simplified schedule of package sizes for certain chemicals. The first revision, which became effective in 1938, embodied changes in package sizes, and amplified the schedule to include standard packaging for basic lead arsenate. In November 1939, the manufacturers submitted a second revision, further enlarging the scope of the recommendation to include packages for nicotine sulphate. This second revision was made effective August 1, 1940.

The current recommendation (third revision) which was approved by a large majority of the manufacturers as well as a representative group of distributors and users of agricultural insecticides and fungicides, is effective from November 1, 1942.

Copies of R41-42 may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents each.

TAPPI Medal Presented to Harry Fletcher

Robert B. Wolf, manager, Pulp Division, Weyerhaeuser Timber Company, Longview, Wash., spoke as follows in presenting the TAPPI medal to Harry Fletcher, president of the Fletcher Paper Company, Alpena, Mich.:—It is a genuine pleasure as well as a privilege to present the TAPPI medal to my good friend, Harry Fletcher, and I can think of no one more worthy of the honor.

As far back as February, 1914, Harry foresaw the ever increasing importance of the technically trained man in the field of pulp and paper manufacture and with this in mind he suggested to the Sulphite Wrapping Paper Association that the technical men of the industry be organized. With the consent of Arthur Hastings, who at that time was president of the American Paper and Pulp Association, he sent out a questionnaire to the mill managements.

Some of the answers to the questionnaire would make interesting and amusing reading in the light of subsequent events.

In those days, it must be remembered, papermaking was far from being scientifically operated. In fact, it was looked upon as an "art"; it had not yet been realized that a really great art is based upon knowledge of natural laws and the conscious application of this knowledge to the day's work. An art, in the last analysis, is a science practiced.

Fletcher's preliminary work led up to a meeting in Chicago in May, 1914, with Messrs.: Mahler, MacNaughton, Rhodes, Obermanns, and Thomas J. Keenan, who afterwards became secretary of what was called the Technical Section of the American Paper and Pulp Association.

On February 19, 1915, a committee on permanent organization was appointed consisting of H. E. Fletcher, Ernst Mahler, H. F. Obermanns, R. H. McKee, C. F. Rhodes, and W. G. MacNaughton. This committee met in Chicago on April 6, 1915, and drew up articles of organization for the section. The committee met again in Chicago on May 6, 1915,

HARRY FLETCHER
TAPPI Medalist

ROBERT B. WOLF
Who Presented TAPPI Medal

with Frank Moore, then president of the A.P.P.A., and established a permanent organization with H. E. Fletcher, chairman, Ernst Mahler and W. G. MacNaughton as associate chairmen, and T. J. Keenan, secretary-treasurer.

The first annual meeting was held at the Waldorf-Astoria, February 17, 1916, at which time the articles of organization were revised and the name of the organization was changed to the Technical Association of the Pulp and Paper Industry.

H. E. Fletcher was elected president of the association, W. G. MacNaughton, vice president, and T. J. Keenan, secretary-treasurer.

Mr. Fletcher served for two years as the first president of TAPPI, and worked tirelessly to put the new association on a sound and constructive footing. He deserves the honor he is receiving today if for no other reason than his indefatigable work in guiding the destinies of the Technical Association in those early critical years.

However, there are other reasons, which I will briefly enumerate, why Henry E. Fletcher is entitled to receive the TAPPI Award.

He graduated from the University of Michigan in 1907 as a chemical engineer, and while at the university he early showed his qualities of leadership.

Besides being a member of the Student Council, he was manager of the Varsity Track Team, president of the Athletic Association, and general chairman, believe it or not, of the Union Minstrel Show. Knowing Harry's inquisitiveness and love of a good argument, I suspect he graduated to this job from the position of interlocutor.

He is a member of the following societies: Delta Kappa Epsilon, Michigamma, Friars, and was made a member of the Tau Beta Pi honorary fraternity.

On leaving college, he went to work in the mill of the Fletcher Paper Company at Alpena, Mich., and in 1913 became its vice president and general manager. He is now president of the company.

He developed the first functional cost accounting method which gave accurate costs of the various grades of paper produced in a specialty mill, and under his direction the Fletcher Paper Company established scientific procedures and methods in both paper and pulp manufacturing.

The Fletcher Paper Company was known for its ability to produce high quality Mitscherlich sulphite papers, and it was therefore only natural that the vertical Fletcher type, high density bleacher now uniformly used throughout the industry should have been developed in the Fletcher mill.

It was inevitable that pulp and paper manufacturing in a single mill could not supply Harry Fletcher with sufficient outlet for his creative imagination and unlimited energy. So, in 1914 he organized the Crittall Casement Window Company in Detroit. He was president of this company from 1914 to 1928. He has been president of the Gilchrist-Fordney Lumber Company of Laurel, Miss., and at the present time is vice president of the Alpena Power Company, and president of the Gilchrist Timber Company at Gilchrist, Ore.

I have visited this plant and was much impressed with the thorough-going scientific methods used in its design, construction, and operation. What impressed me most, however, was the thoughtful consideration that was given to the matter of proper housing, recreational facilities, and all those things which conserve and stimulate human values.

In order, perhaps, to guard himself against taking life too seriously, Harry became president of the Bob-Lo Excursion Company of Detroit. I suspect this job was the later-life equivalent of his under-graduate minstrel show activities. At any rate, it is proof that he believes in play as well as work.

During World War I, he was a member of the State of Michigan War Board, Chief of Division of the American Protective League, and Staff Assistant of the U. S. Emergency Fleet Corporation.

He was a member of the First State Board of Aeronautics, and is a member of the Isle Royal National Park Commission which has added so much to the beauty of upper Michigan.

One of Harry's outstanding characteristics is his tenacious, bull-dog like tendency to get at the underlying facts of any particular situation. Once having made up his mind that he is in possession of all the essential facts, he does not hesitate to act upon his convictions.

I remember when we were associated in the U. S. Emergency Fleet Corporation in 1918 having a strenuous discussion with him one day regarding an industry matter. To end the argument, which had become quite strenuous, Harry commented as follows: "Well, Bob, you may be right, but I am like the Scotchman who was willing to be convinced, but never yet saw the mon who could doot."

In these days, individuals like Henry E. Fletcher, who approach the problems of life with a true, scientific spirit and who will stick to their convictions so arrived at, are all too rare. Such men deserve recognition, and therefore, friend Harry, it gives me great pleasure to present you with this token of TAPPI's appreciation of your outstanding contribution to the advancement of the technology of pulp and paper manufacture.

Mr. Fletcher responded briefly in accepting the medal.

American Pulpwood Association

The annual meeting of the American Pulpwood Association was held on Thursday, February 18, at the Waldorf-Astoria Hotel, New York. The following board of directors were elected:

Northeastern Region: H. P. Carruth, Brown Company; Frank G. Knights, New York and Pennsylvania Company; W. E. Becraft, International Paper Company; George D. Bearce, Maine Seaboard Paper Company.

Appalachian Region: T. W. Fernold, The Mead Corporation; Wm. D. Comings, West Virginia Pulp and Paper Company; Paul Koenig, Glatfelter Pulp Wood Company; W. S. Mundy, Jr., Independent.

Southern Region: C. O. Brown, International Paper Company; C. E. Smith, Champion Paper and Fibre Company; E. A. Charlton, Union Bag and Paper Corporation; R. H. Laftman, National Container Corporation.

Lake States Region: Charles H. Sage, Kimberly-Clark Corporation; A. B. Hansen, Northern Paper Mills; J. M. Conway, Hoberg Paper Mills, Inc.; Frank A. Kelly, The Northwest Paper Company.

At Large: J. O. Lynch, Eastern Corporation; William T. Brust, Temperance River Company; Walter L. Cobb, Eastern Pulp Wood Company; E. A. Sterling, Johns-Manville Products Corporation of Virginia; W. J. Damtoft, Champion Paper and Fibre Company; Louis J. Freedman, Penobscot Purchasing Company; E. J. Gayner, 3rd, Brunswick Pulp and Paper Company; Robert R. Drummond, Oxford Paper Company; Karl A. Swenning, Hollingsworth & Whitney Company.

Paper Club of New York Dinner

The Paper Club of New York held its annual dinner on Wednesday evening, February 17, in the grand ballroom of the Waldorf-Astoria Hotel, New York. The club also engaged the Sert room for later entertainment of members and guests. Stanley Melba and his band furnished the music at both places.

Professional talent provided the chief attraction, with Henry Youngman, comedian, master of ceremonies. Among the headliners were Jane Pickens, singing star at the La Martinique restaurant; the Three Pitchmen, appearing in Sons o' Fun; Raye and Naldi, ballroom dancers; John Sebastian, harmonica artist; Ben Yost's sextet, and Elaine Seidler's Park avenue debs.

The entertainment committee was composed of the following: Stanley A. Andrews, chairman; C. H. W. Dunbar, John H. Woolsey and Fen K. Doscher. Charles C. Walden, Jr., was chairman of the banquet committee and Stanley O. Styles, treasurer. E. F. Miles, Louis Gailer and Murray Schlosser were co-members of the committee.

Accepts Slabs for Pulp Production

GREENVILLE, N. C., February 15, 1943 — The Southern Kraft division of the International Paper Company, whose pulpmill is located at Georgetown, is now accepting slabs left from sawmill operations for pulping use, E. B. Price, district forester, announces.

The mill will pay $5.00 per standard cord for all pine slabs loaded on railroad cars.

Wood Pulp Allocation and 1943 Wood and Pulp Prospects*

By Oliver M. Porter[1]

Wood Pulp Allocation

It was my privilege to be connected with the War Production Board's Pulp and Paper Branch, as it was then known, when it was developing its plan for the allocation of wood pulp.

The task involved the creation of an entirely new system of *controlled distribution*. The purpose of this system was to make sure that enough pulp of the right kind would be available where and when it was needed for essential war and civilian production. Such distribution involved supplies of pulp not only for all kinds of paper and paperboard, but also for non-paper uses of pulp—in the manufacture of explosives, rayon, cellophane, plastics, etc.

Weeks and months of work were required to prepare what you now know as "M-93" and its various "PD 290" forms, and to create a system for recording the information contained on those forms in such a way that all the mass of these data could be checked, analyzed, and boiled down to the point of issuing permission to ship and to receive about 900,000 tons of pulp every thirty days.

Truly a Herculean task was accomplished—and right here I want to pay the highest tribute to the men and women of the Pulp Unit, and particularly to its presiding genius, David Graham. The Pulp and Paper Division and the Pulp and Paper Industry are extraordinarily fortunate in having had him as head of that unit. He is a remarkable combination of patience and persistence, and above all is a man who knows figures and how to use them.

Pulp allocation *works*—and I believe that there is no one who can rightfully say that it doesn't—because of his rare vision and ability. If ever a civilian deserved a Distinguished Service Medal, he does. Through him, and his associates in the WPB, the wheels of production in your industry have been kept rolling, and no one yet has had to shut down because of a lack of wood pulp.

How Pulp Allocation Works

You might like to know just how pulp allocation works.

Before the 2nd of each month, every *consumer* of wood pulp files with his normal sources of supply a request for his requirements during the following month. Consumers also furnish certain information to the WPB regarding their actual and estimated pulp consumption, inventories, etc.

These requests for pulp are then reviewed by the pulp *producer*, who, in turn, files with the WPB his proposed shipping schedule, actual and anticipated production, stocks, etc.

All of these data are checked as to accuracy and are then recorded in large ledgers, which show the consumers' requirements, the extent to which their normal suppliers (including Canadian manufacturers) propose to meet these requirements during the following month, and their previous consumption and inventories—and all this by 22 separate grades or kinds of wood pulp.

From these thousands of individual entries, the staff of the Pulp Unit then draws up totals for each grade of pulp, showing the month's requirements balanced against potential supply. The individual consumer's requirements are then checked against his producers' proposed shipping schedules and his own inventories to determine whether or not he should receive the amounts of pulp he has requested.

Objectives of Pulp Allocation

Bear in mind the objectives of pulp allocation:

1. To maintain production
2. To provide enough pulp of the right kind, at the right place, to insure essential war and civilian production
3. To equalize inventories among consumers
4. To prevent unnecessary cross-hauling

It might also be well for you to realize that what the producer schedules does not control the final allocation to the consumer. That depends upon the essentiality of his products, the volume of his inventories, and the total available supplies of pulps best suited for his purpose.

It is frequently necessary to adjust the producer's shipping schedules by decreasing or increasing the amounts of various kinds of pulp he proposes to ship. Where total supplies of a specific grade are insufficient in any given month, it is also necessary to substitute usable fibre from other grades than those specified, or to direct shipments from other sources of supply.

Pulp Allocation Advisory Committee

All of this work is done by Mr. Graham's staff in preparation for monthly meetings of what is known as the Wood Pulp Allocation Industry Advisory Committee. This committee *now* consists of the following 15 pulp producers and consumers:

PRESENT MEMBERS

M. D. Bardeen—Lee Paper Co.	S. E. Kay —International
A. W. Berggren—Rayonier	J. L. Madden —Hollingsworth & Whitney
D. G. Driscoll —Sorg	H. O. Nichols —Crown-Zellerbach
G. E. Dyke —Gair	N. L. Nourse —Brown
R. G. Fairburn —Berst-Foster-Dixfield	G. R. Wallace —Fitchburg
R. A. Hayward —Kalamazoo Veg. Parchment	F. S. Wakeman —Ohio Box Board
Amor Hollingsworth —Penobscot	Oliver M. Porter—U. S. Pulp Producers Assoc.
R. W. Hovey —Oxford	

FORMER MEMBERS

F. W. Brainerd—Scott	G. B. Gibson —Union Bag
C. H. Conrad —Rayonier	H. H. Hanson —Hamilton
D. Crocker —Crocker, Burbank	L. K. Larson —Weyerhaeuser
	D. L. Stocker —Michigan Paper

This is not only a representative committee of pulp consumers and producers, but it is one of the most objective and hardworking of all of the advisory committees which I have seen functioning in Washington.

[1] Executive Director, United States Pulp Producers Association, 122 E. 42nd St., New York, N. Y.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 15-18, 1943.

It does not allocate pulp. Its function is to review the allocation setup proposed by the Pulp Unit and to make recommendations as to any changes which may seem necessary or desirable. These are then reviewed by the Pulp Unit before approved shipping schedules are issued by the Director of Industry Operations.

The allocation committee does its job thoroughly. Two men, a producer and a consumer, pair together and study every single proposed shipment in the ledger on which they happen to be working. Care is exercised to see that no consumer and no producer works on his own schedule. In cases of doubt as to a mill's requirements, either the judgment of others on the committee who are familiar with the particular situation involved, or that of the whole committee, is requested by the pair who are reviewing the schedule in question.

It may seem a little strange to you, but it is a fact nevertheless—the same care is exercised in the case of a shipment of 25 tons of pulp as in that involving 500 or 1000 tons. The committee works two days on each month's allocation, frequently far into the night.

Conditions of inventories, requirements and potential supplies which exist one month may be quite different the following month, and each receives the best judgment of the committee based on the *facts* developed by the system itself. Thus if you do not get all of the bleached sulphite, for example, which you have ordered in any one month, you are not on a one-way street and headed for a shutdown, because your particular situation will be reviewed and corrected if possible the following month.

In addition to the actual details of pulp allocation, the committee's advice is continually sought in respect to matters of *policy*. It is in this field, perhaps, that the committee's work is of the most value to the WPB and the industry, because its recommendations are based on practical experience with the problems of the industry.

How you can help

There are two things which you, your companies, can do which will help this pulp allocation tremendously.

First, see to it that your PD 290 forms are *filed promptly*, as required under M-93. Second, be sure that your figures, as reported to the WPB, *are correct*. If your reports are late, the whole program is delayed—because it is impossible to derive complete totals of supply and demand until all mills' requirements and proposed shipping schedules have been filed with the WPB. If you inadvertently list tonnage as *consumed* rather than as *shipped*, the resultant error doubles itself, and requires hours of patient search through all of these forms and ledger-entries before it is discovered and corrected—as it always is and will be, under the system of checks and balances which Dave Graham has set up for control of this statistical work.

The WPB is now asking for information as to the *furnishes* used in the production of the papers and paperboards which you manufacture. With the wood situation becoming more and more critical, it is absolutely necessary for the Pulp and Paper Division to have this information in order that, in its pulp allocation, it may stretch to the limit the use of all available fibres in the manufacture of essential war and civilian commodities. I therefore urge your fullest cooperation with the Division in the preparation of this report.

1943—Wood and Pulp Prospects

I shall not take any more of your time in discussing wood pulp allocation, but will now turn to the other half of the subject assigned to me, namely: "1943 Wood and Pulp Prospects."

Historical Aspects

I should like first to deal very briefly with what might be termed the "historical aspects" of this situation:

For some years prior to the outbreak of the present war in Europe, there had been a relatively steady and healthy annual increase in United States production and consumption of wood pulp. Then in 1940-1941 came a huge, abnormal increase, due to war demand, and perhaps a somewhat premature alarm over prospective shortages.

The figures themselves tell the story:

THOUSANDS OF TONS OR CORDS

	U. S. Pulp Production	U. S. Pulp Imports from Canada	U. S. Pulp Imports from Europe	Total Pulp Imports	Pulp Imports + Dom. Production	U. S. Pulpwood Consumption
1939	7,000	640	1,400	2,040	9,000	10,800
1940	8,800	828	400	1,228	10,000	13,700
1941	10,000	1,131	12	1,143	11,100	15,700**
1942	10,200*	1,200	0	1,200	11,400***	16,800

* WPB data 10,440 tons
** WPB data 16,200 cords
*** WPB data 11,640 tons

Now let's look at the 1942 situation:

First, as regards *wood* supply:

	Million Cords
Total U. S. Pulpwood inventory as of January 1, 1942	3.7
Domestic Pulpwood receipts during 1942	14.5
Imports of Canadian wood during 1942	2.2
Net total Supply	20.4
Diversion and Inventory adjustments	.2
The inventory at the end of 1942 was	3.4
Indicated 1942 Consumption	16.8

Total inventories of wood decreased some 300,000 cords in 1942. Unfortunately the decreases were not the same, proportionately, in all regions.

Thus in the Appalachian Region the decrease was only 4%, while it was 9% in the northeast, 45% in the Pacific northwest, and 64% in the south.

In the Lake States inventories of wood actually *increased* about 300,000 cords, or 32% during 1942.

As far as *wood pulp* is concerned, the 1942 situation was as follows:

GOVERNMENT DATA

Total U. S. Production, all grades	10,440,000 tons
Imports	1,200,000 tons
Stocks (12/31/41)	770,000 tons
	12,400,000 tons

Consumption of wood pulp during 1942 is estimated in tons to have been as follows:

Bleached Sulphite, total	1,860,000
Unbleached Sulphite	1,600,000
Bleached Sulphate	600,000
Semi-bleached Sulphate	165,000
Unbleached Sulphate	3,800,000
Soda Pulp	500,000
Semichemical and miscellaneous	600,000
Groundwood	2,000,000
Total	11,125,000

Of this total 1942 Consumption of 11,125,000 tons

Integrated mills used	8,305,000 tons	or 74.7%
Nonintegrated mills used	2,420,000 tons	or 21.7%
Nonpaper consumption accounted for	400,000 tons	or 3.6%
Lend/lease and other Exports totalled	401,000 tons	

Other materials consumed in the manufacture of the 16,522,000 tons of paper and paperboard produced in 1942 were as follows:

Waste Paper	5,500,000 tons
Other Fibrous Materials	1,190,000 tons
Filler	870,000 tons

So much for what the situation was in 1942.

1943 PROSPECTS—

Now let us consider briefly what the 1943 prospects are:

PULPWOOD:

The best present estimates indicate an overall reduction of about 25% from the 1942 supply. By regions the figures work out as follows:

RECEIPTS (Includes Imports) Thousands of Cords

Region	Actual 1942	Per cent of Total	Anticipated 1943	Decrease in Cords
Appalachian	1,455	9%	5,845	1,704
Northeast	3,353	20%		
Lake States	2,741	16%		
South	6,320	38%	4,750	1,570
Pacific Northwest	2,843	17%	2,030	813
Total U. S.	16,712	100%	12,625	4,087

It is probable that *imports* of wood during 1943 may total 1,700,000 rough cords from Canada. This would be a decrease of about half a million cords from the amount imported during 1942. There is some possibility of this amount being augmented by imports of pulpwood from countries other than Canada and Newfoundland. It is doubtful, however, if we can expect any very substantial amount of wood from such sources this year, though it might become a factor in the post-war period.

One doesn't have to be a technical slide rule expert to figure out the effect on *pulp* production of a 25% reduction in the amount of available *wood* supply. In 1942 we produced 10,400,000 tons of wood pulp from a consumption of 16,850,000 cords of wood. *If* (and there *is* an "if" here) we can count on only about 12½ million cords of *new wood* this year, augmented by a drain on inventory of perhaps another ½ million cords, we would have a 13 million cord supply in 1943, in contrast with the 17,000,000 cords of 1942. At the 1942 rate of conversion, wood to pulp, this would indicate a *1943 domestic pulp production of only about 8 to 8½ million tons of new pulp*—as compared with the 10 million tons produced last year. Of course if the pulp mills eat further into their 1943 wood piles they could produce more pulp, but by doing so the 1944 situation might be just that much more jeopardized.

It is probable that 1943 pulp imports will just about balance our 1943 exports plus nonpaper pulp consumption, which has been steadily increasing, particularly as regards Nitrating pulp for explosives.

Woods Labor Supply: As far as *pulp* is concerned the whole problem comes down to a *question of wood supply*, which in turn hinges upon the shortages in woods labor, trucks, tires, etc.

I think it somewhat unlikely that the War Manpower Commission, for example, will be able to do very much toward getting a more adequate supply of woods labor for the pulp and paper industry; but I cannot see why *Army woods labor battalions* should not be organized and equipped for service in areas of greatest woods labor shortages, for the specific purpose of producing pulpwood and logs. We did just that in the last war, *in France;* I do not see why it could not be done *here* in this war.

Paper Production Prospects: I do not now propose to discuss "concentration" or "relative essentiality"; but I suspect that if the War Production Board's present plans contemplate a production of 4,100,000 tons of paper and paperboard during the first quarter of this year, the public generally would be well-advised to expect production at considerably lower levels than that rate during the latter part of 1943. My own guess is that we will neither be able to produce, nor will we be permitted to produce more than about 13½ to 14 million tons of paper and paperboard this year (as against 16,522,000 tons in 1942)—unless there should be a very substantial increase in the consumption of old paper stock and substitute fibres, or a turn in the progress of the war which is not now anticipated.

On the other hand, it is not impossible that before the end of 1943 we may find the paper industry in the same boat with the automobile industry—in which case there might be quite adequate supplies of wood and pulp for what we would be permitted to manufacture.

But we are going to have less wood to make pulp from this year, and we are going to make less pulp than we did last year. That in itself indicates the necessity of seeing to it that the scarcest kinds of pulps are not wasted in the manufacture of unessential products, and that the fullest possible use is made of waste paper stock and substitute fibers.

I am inclined to think that despite the prospective curtailment in the manufacture of end products which are not considered essential in an all-out war economy, and despite other limitations in production fields which normally consume very large amounts of pulp and paper, we will be confronted with a situation whereby there will be only enough pulp available in 1943 to take care of the essential war and civilian paper and paperboard requirements. I am not so sure about 1944. Much will depend upon:

1—the extent to which we can get in more wood during 1943 than now appears likely;
2—your ability to stretch to the limit the use of available fibres of all kinds; and, of course,
3—the progress of the war.

Stretch your Fiber Supply: The war cannot last forever; sooner or later war requirements will begin tapering off in favor of civilian production. But in the meantime you technical men have a job to do in respect to paper and paper board production—and that is to use every ounce of your ingenuity and ability *to make your fiber supply go as far as possible* and to last as long as possible, in order that your mills may be in shape to take up the slack when this tapering off begins to open up the possibility of increased civilian consumption.

The WPB's Pulp and Paper Division

Now I should like to say just a word about the WPB's Pulp and Paper Division as a whole, as it is presently staffed and operating. They are doing a *good* job. The executives of that office, from Art Wakeman down, are neither bureaucrats nor "rusting Government employees." They are making a significant and constructive contribution to the winning of this war. None of them will ever get any medals or military decorations for their work; nor are they building a job for themselves in the future, except as what they are doing in Washington will help to pre-

serve our freedoms, and will bring our industry through this national emergency in such shape that it can meet its obligations *now*, and be in a position to resume its rightful place in the progressive economy of our New World.

Help Needed and Wanted

One thing I have noticed, and that is that all of them there in the Pulp and Paper Division are *now*, more than ever, quite willing and anxious to try to work out their problems with the advice and help of the industry. They need your help and they want your help. They will do their job if we do ours. But don't try to sell them a gold-brick; they are not in the market for that kind of assistance. They deal with *facts*, seasoned with the best judgment and experience of practical men from the industry. If you don't like what they are doing, tell them so; but be prepared to substantiate your opinions with *facts*, and remember that it takes more than pulp and paper to win a war. Our products are in competition with those of almost every other domestic industry in the Government's war planning. We shall have to demonstrate our essentiality if we are to be assured of what we might consider reasonable rates of operation.

On Job!

The Germans and the Japanese are not in our back yard. God willing, they never will be—but to keep them out, all of us must do *that which we are best fitted to do*—which is to keep production rolling to the very limit of our ability, with whatever tools we may have, and whatever amounts of raw materials may be aavilable to us. That is the challenge of the present limited supply of wood and pulp, with which all of us in this industry are confronted. I believe that we shall not fail to meet it effectively!

Some Factors In Detergency*

By Foster Dee Snell[1]

Abstract

The property of detergency can be broken down into, at the most, four factors. They are (1) the initial alkalinity or pH of the detergent solution, (2) the total alkalinity or buffer value of the detergent solution, (3) effect in lowering of interfacial tension between the soil to be removed and water, and (4) the combined property of deflocculating and emulsifying power. Methods of evaluation are outlined for each in general terms.

Synthetic surface-active agents as well as soaps, sulphated oils, etc., are all available in terms of one or more of these properties, usually without the first two.

Introduction

Detergency has several merits as a subject. It is so complex that no one really knows much about it. It is so thoroughly mixed up with problems of chemistry and physical chemistry that practically any statement can be disproved by citation of some contradictory factor. Its importance is in part indicated by the use of 17 different types of detergent supplies in one of the large hospitals, each with a definite function, ranging from lye to clean the sink drains to olive oil soap to wash the babies. Dissimilar as those are they depend in varying degrees on the same factors. To put it differently, last year sales of soap in various forms in the United States aggregated over two billion pounds and including special detergents probably approached four billion pounds, which is merely to say that the detergent industry is a big industry.

The paper industry is concerned with it in many ways, detergency applies not only to dishes and clothes but to felts and floors, in other forms to pressure vessels and to water pipes, the latter incidentally often and preferably in a negative sense. The separation of cellulose from lignin may be visualized as a gigantic case of detergent separation of one desired form of matter from another undesired one. Because of limitation as to space, the subject can be treated only generally and briefly.

The known factors in detergency are (1) initial alkalinity or pH of the detergent solution, (2) total alkalinity or buffer value of the detergent solution, (3) effect in lowering of interfacial tension between the soil and water, and (4) deflocculating and emulsifying power. Each will be taken up in that sequence.

Initial and Total Alkalinity

Many special cases include only some of those factors but the most complex cases include only those. For example, a synthetic wetting agent may have only the property of lowering interfacial tension, it may also have deflocculating and emulsifying power, it will not have alkalinity.

Most detergency is applied in alkaline solution. Therefore the broadest form can be first taken up, later related to more specialized forms. Detergency is so miscellaneous in its applications that the soil to be deterged must be considered in a very broad and general way.

Let us first define a typical soil for general detergency. Chemically one visualizes the presence of inert particles insoluble in water, saponifiable oils, unsaponifiable oils, free fatty acids, proteins and carbohydrates. So one builds up a soil on that basis. As dirt carbon black may be selected. It should be inert, represent the most serious contamination by inert dirt and even a trace can be detected by color. Alternatively in some work burnt umber which is silicious in nature but inert has been used. For saponifiable oil select corn oil or cottonseed oil or any other saponifiable oil of very low, known fatty acid content. The reason for this will appear shortly. As mineral oil select a standard grade of highly refined oil, the latter only to insure that it is of known and duplicable composition. And then consider the most important ingredient, the fatty acid. Have a small amount present to correspond with some one's guess as to the acidity of dirt in general. To put this on a surface for measuring detergency later, one will have

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to use a solvent, but for the present the only interest is in the dirt per se which is

Carbon black	4 grams
Mineral oil	5 grams
Cottonseed oil containing 0.38% free acidity as oleic.	3 grams

Note that proteins have been ignored because they are removed by solution in water. And carbohydrates, if not water-soluble, are so much more inert material and can be typified by the carbon black. That sounds like quite a mess and it is. But in deterging industrially, no one can dispute that as difficult materials have to be removed. Each industry has its own special problems of course. If the inert soil is white rather than colored and is not removed, it will not look the same. But fundamentally this soil is based on having one which can be shown visually to be present or absent.

That is only one possible synthetic soil. A great deal of work has been done with one consisting only of petrolatum and carbon black. The more complex one has a better theoretical basis.

Now having a soil one is ready to visualize what happens when it is removed. As a fundamental hypothesis assume that no "clean," that is unoiled dirt is present. In other words, if dirt has nothing to stick it on, it will fall off, or brush off. Dirt which adheres closely is coated with at least a monomolecular film of oil or grease. One may call it oil to avoid confusion with compounded greases used for lubrication. All such dirt is essentially acid in nature because all saponifiable oils are acid. Most contamination known as dirt is more acid than that.

So one turns to the specific properties of detergents. If a practice is rather generally followed, either industrially or in the home, there are two scientific attitudes which may be taken. One is to assume that its rather general adoption is due to some fundamental reason which justifies it. The adoption may have been by trial and error but scientifically one may look for reasons for its adoption. The other is to ignore it. The first attitude is preferable. Practically all cleaning materials used industrially are alkaline. Perhaps that statement is open to question until explained, and of course there are exceptions. Soap is the most common cleaning material. The pH of a soap solution free from excess alkali or builders is 10.2. So it is alkaline with respect to the usual neutral point of pH 7.0. And what a liar that makes out of the people who talk about neutral soap—except in a special sense. For purpose of discussion, one conveniently refers to pH 10.2 as the neutral point of soap. Any pH lower than that means partial decomposition, any higher one means that alkali or builder has been added. This will give an interesting contrast in later consideration of synthetic surface-active agents.

But to return to alkalinity, why are so many detergents alkaline? The answer is because alkaline cleaning materials react with the fatty acid in the soil to form soap *in situ*.

As an illustration, about 0.005 mole per liter of alkalinity is destroyed in a typical laundering operation starting with dry soiled fabrics. Some may be absorbed and some destroyed by carbon dioxide but successive washes destroy less than half as much so there must be a measurable acidity present to be neutralized.

Soil is more readily removed by a strongly alkaline washing solution than by a weakly alkaline one. As measured by pH the first factor is the initial alkalinity. Thus a solution of borax and soap is not as effective as a solution of soda ash and soap. And soda ash is not as effective as sodium metasilicate and soap. That is generally true, the problem is to explain why.

But since the soil is acid it is going to destroy some alkalinity so that the next factor is total alkalinity above pH 10.2 if soap is being used. Why above 10.2? Because that is the neutral point of soap. When it falls below 10.2, soap is being destroyed. Builder costs 2-5c per pound, soap over 10c. So that is bad economics. This is beautifully illustrated in the usual laundry cycle. The first operation is a "break" with plain alkaline salt solution. Why? To neutralize the acidity of the fabrics making soap from it and thus start the cleaning operation. Of course this cold break has other functions that are not pertinent to this more general discussion.

This factor of total available alkalinity is sometimes phrased as buffer action. If limited to buffer action above pH 10.2 that is a correct description.

These two factors of initial alkalinity and total alkalinity can be nicely evaluated from comparative electrometric titration curves of the builders being compared. Typical comparative data are shown in the accompanying figure. And, by the way, don't forget that pH is logarithmic, not linear. Call the concentration to change from pH 7 to pH 8 unity. Then it takes 10 times as much to change from 8 to 9, 100 times as much from 9 to 10 and 1000 times as much from 10 to 11. It continues to progress in the same way. Hence a few tenths of a pH in the upper brackets is important. To prove a point about alkalinity or acidity to a non-chemist, it is best not to use pH values but to translate them into C_{OH} or C_{H} and they will be a lot clearer.

Interfacial Tension

The next factor is what is sometimes called wetting power. The subject is complicated by interrelation of factors. When soil is displaced from a surface it is wet and floated off. But interfacial tension between a solid and a liquid generally cannot be measured. Hence, it is fortunate that soil can be visualized as having a surface with the properties of a liquid, the oil film on its surface. This factor then is readily measured by the stalagmometer method using a mixture of equal parts of mineral oil and vegetable oil with a known acidity as one liquid, the built soap solution as the other.

Of course the complications of detergent chemistry pile up as one goes on. The formation of soap in the interface by reaction of the detergent solution with the fatty acid in the soil is a big factor. And if the alkalinity is great enough the interfacial tension becomes so low as to be unmeasurable. This problem of standard soil for measurement of interfacial tension has been simplified by using benzol containing 0.1% of free fatty acid. Comparable results are obtained. When one type of stalagmometer is used, the water falls through oil, with another the oil rises through the detergent solution. The latter more closely approximates actual detergency. But the results by the two methods check surprisingly closely. Of course, alkaline salt must always be in excess of the fatty acid in the interface or the results become inconclusive. The du Nouy ring method is an alternative.

On the basis of initial and available alkalinity or lowering in interfacial tension the order of decreasing activity of builders when added to soap is sodium

hydroxide, sodium orthosilicate, sodium metasilicate, trisodium phosphate, sodium carbonate, modified soda, sodium chloride and borax. One could predict that series except the location of sodium chloride above borax. It is cited only to show that the results check with commercial experience as a proof of the importance of the factor of lowering of interfacial tension. What about a neutral soil? No results at all in lowering of interfacial tension, values the same as for pure water if soap is not present. What does the builder do when soap is present but acidity is not? According to a complex equilibrium arising from the law of mass action it drives the soap from the form of dissolved and ionized soap toward micellar soap. Here is a point on which as definite proof cannot be given as of most factors. But if the interfacial tension of sodium hydroxide solution against benzene, a neutral soil, is 30.6 dynes, that of soap against benzene 16.4, and that of the combined solutions 5.4 it seems reasonable that formation of micellar soap lowers the interfacial tension. The values for other builders are equally positive but naturally smaller due to less Na^+ and OH^- ion present.

Deflocculation and Emulsifying Power

The soil must be loosened from the surface. Then it must be dispersed as discrete particles or deflocculated. Then it must be floated away, emulsifying power. These two properties combined are the fourth factor. They are not separable. Emulsifying power, by the way, is correct terminology because each particle is coated with oil and the dispersion is of oiled dirt particles in detergent solution. Numerous methods have been tried for the purpose of evaluation. One is to coat burnt umber of known mesh with the oil-fatty acid solution as used for measurement of interfacial tension. Addition of a known amount of this to a given detergent solution and shaking gives a suspension. And the umber is certainly flocculated in advance. In fact the method probably measures mainly deflocculating power. After a definite time a known volume of the supernatant layer is ashed and the residue dissolved in acid. By using umber one can titrate the iron as a simple method of determining the suspended umber. Results here show two divergencies from results with other factors.

Trisodium phosphate and the silicates are most efficient. This is not unexpected since those are known to be better deflocculating agents than other alkalies. And queerly enough the effect of the alkaline salt alone and of the soap alone are additive to give the value for the mixture. So it appears that

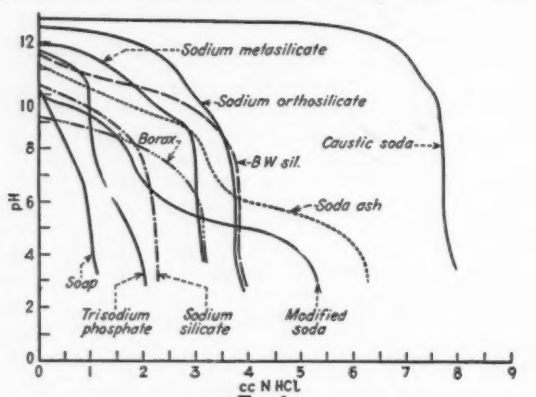

FIG. 1
Electrometric Titrations of 0.66% Solutions of Soap and Common Soap "Builders", Expressed as pH

for deflocculating and emulsifying power the formation of soap micelles is not helpful. But it does not hinder either. More detergents fail in this property than in any other one. Lack of it results in redeposition of the soil at another point.

Having covered the individual factors but lacking confidence in their being all that are involved and not knowing their relative importance in absolute terms some combined method of evaluation is often used. Many published results were obtained with the Rhodes and Brainard apparatus. The launderometer is almost as good, takes less time and is often used when a washing machine or a small commercial wheel is not preferred. The standard soil is the carbon black and oil mixture described, but diluted with carbon tetrachloride. The soiled fabrics are read photometrically, laundered in the laboratory, and again read. The removal of standard soil generally checks the results predictable from the specific methods.

Measurement of the individual factors and estimation of their relative importance is probably more significant in the general case.

A few special cases of detergency are useful for illustrative purposes. Take a well known method for removal of stubborn spots. Wet them with oleic acid, then wash them out. Of course. That fits beautifully into the principles outlined. Form "nascent" soap at the interface of the soil stains and out they come. Every laundryman has been cleaning dark streaks from collars in that way for years.

Liquid degreasers which are sprayed on and hosed off are powerful wetting agents in kerosene solution which will emulsify with water.

Household soaps have undergone a revolution in the past few years due to addition of tetrasodium pyrophosphate or occasionally sodium hexametaphosphate. They simply reduce the soil to be removed by preventing precipitation of heavy metal soaps. In hard water districts half the soap was used as water softener, then the precipitate had to be washed away. They have been used in removing calcium deposits from papermakers' felts, probably are still so used.

The factor of neutral point of soap at pH 10.2 is in itself sufficient to rule out soap in many forms of work. Take wool. Excess alkalinity of builders is unsatisfactory as applied there although mechanical factors are at least as important as chemical ones. Every wool washer knows that his partially fouled liquors wash better than clean ones, due to protective colloidal action of the emulsion formed.

The alkyl sulphates, keryl benzene sulphonates and related surface-active compounds have become prominent in the past several years for wetting out textiles and multitudes of other applications. They possess the factors of lowering of interfacial tension and deflocculating and emulsifying power. Special forms are stable to strong alkali. In particular uses such agents are very effective.

Metal cleaning and commercial dish washing are other variations, sometimes somewhat remote but nevertheless variations.

In short, detergency as the broad subject includes soap formation, wetting power, and deflocculating and emulsifying power. Those are probably the only factors in detergency. Many cases do not include all.

Recently a trade journal announcement recommended the use of sodium metasilicate on fish. Purpose—to reduce the odor. That should be the ultimate in detergency.

The Effect of Small Additions of Bleach Liquor on the Bacterial Content of Sulphite Pulp*

By John W. Appling[1] and Bernard F. Shema[2]

Abstract

Sulphite pulps of low bacterial content can be produced by the action of 2% bleach (on the basis of a 35% bleach powder), provided the bacteria present have a low resistance to chlorine. On the other hand, sulphite pulps of low bacterial content cannot be produced by exposure to either 2 or 8% bleach if the bacteria present have a high resistance to chlorine.

Sulphite pulps of low bacterial content can be produced by exposure to 16% bleach, regardless of whether the bacteria present have a low or a high resistance to chlorine. It should be noted that these pulps were bleached to a brightness of approximately 77%.

The restriction of chlorine consumption for bleaching pulp has been accepted by the paper industry as a wartime necessity. It is generally accepted that completely bleached pulps have an extremely low bacterial content. In fact, they are usually sterile as they leave the bleaching operation. This low bacterial content has been considered an asset in the manufacture of paper used for food packaging. It is not known how partial bleaching would affect the bacterial content. In view of the fact that this type of bleaching has become necessary, it was decided to study the effect of small additions of bleach liquor on the bacterial content of sulphite pulp.

The procedure followed for bleaching was similar to that described by Koon *(1)* for determining the bleach requirement of pulp. The deviations from this procedure were: *(a)* the pulp consistency was 5%, which approximates closely that used in bleachers; *(b)* the water bath temperature was 40 ± 1° C., which is more favorable for bacterial growth; and *(c)* the jars of pulp and bleach liquor were shaken vigorously by hand at approximately 5-minute intervals. Unbleached spruce sulphite pulp having a high bacterial content was selected for this first experiment.

Immediately after the exhaustion of chlorine, as determined by starch-iodide paper, a 40-gram sample was removed aseptically from each jar for bacteriological analysis. This sample was diluted with the required amount of sterile water, which contained sufficient sodium thiosulphate to neutralize the remaining chlorine, to make a 1% suspension of stock. After shaking well to insure thorough mixing, the sample was plated for its bacterial content. The results appear in Table I.

The sheets for brightness were made from the stock in the jar from which the bacteriological sample had been taken. The values of brightness for each increment of bleach are also given in Table I. These values correspond to those usually obtained for this type of pulp.

TABLE I.—EFFECT OF VARIOUS CONCENTRATIONS OF BLEACH ON THE BACTERIAL CONTENT AND BRIGHTNESS OF UNBLEACHED SULPHITE PULP

Percentage Bleach on the Basis of 35% Powder	Time in Minutes for Exhaustion	Bacterial Content, count/gram	Average Brightness, %
0	...	4,720,000	52.5
2	5	520	48.2
4	10	260	50.6
6	20	470	55.1
8	35	380	60.6
10	45	350	65.6
12	90	270	71.7
14	120	420	76.1
16	180	210	79.4

The results show that the bacterial content of the unbleached pulp suffered a tremendous decrease during 5 minutes of exposure to 2% bleach. As a matter of fact, the successive increments of bleach did not make further appreciable reductions in the bacterial content of the pulp. This indicates that the 2% bleach was just as effective, for the purpose of killing the bacteria present, as the higher concentrations of bleach which were used. An examination of stained smears from the various colonies of bacteria revealed the presence of cocci, small rods, and large rods in the unbleached sulphite lap. However, in the case of the sample treated with 16% bleach, there were no cocci and only a few cases of rods not showing spores. Most of the surviving bacteria were definitely spore-forming rods.

Although the unbleached pulp used above had a high bacterial content (4,720,000 per gram), most of the bacteria were readily killed by chlorine, because the 2% bleach appeared to be practically as effective as the higher concentrations of bleach. An unbleached sulphite pulp of low bacterial content was selected for the remaining experiments. At first it was believed that its bacterial content of 1150 per gram might be neglected in view of the fact that large numbers of known spore-forming bacteria were to be added prior to the treatment with the bleach liquor. The increments of bleach used were 2, 8, and 16% (on the basis of 35% bleach powder).

The results obtained were difficult to interpret because of the unknown effect of the bacteria which were originally present. Accordingly, a second series was set up in which it was attempted to sterilize the pulp prior to its inoculation. Each jar of pulp was heated for 40 minutes at a pressure of 15 pounds (121° C.) and was allowed to cool overnight. Four different species of bacteria were used (Table II), three of which were spore forming and heat resistant. The fourth was included as an example of nonspore-forming bacteria which were not heat resistant. The results were still difficult to interpret quantitatively. There was an excellent survival of all three spore-forming bacteria after exposure to the 2% bleach. There was a slight survival after exposure to the 8%

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TABLE II.—SURVIVAL OF BACTERIA IN SULPHITE PULP
(Three Consecutive Sterilizations)

	Spore Formers *			Nonspore Former
	B. mycoides var.	*B. megatherium*	*B. sp.*	*Aerobacter aerogenes*
0% Bleach				
Bacteria per gram....	17,000,000	28,000,000	380,000	40,000
Average brightness, %	48.9	47.9	51.8	48.9
2% Bleach				
Exhaustion time, min.	12	12	12	12
Bacteria per gram....	19,500,000	20,300,000	370,000	None
Average brightness, %	46.8	47.0	47.4	42.2
8% Bleach				
Exhaustion time, min.	70	70	70	70
Bacteria per gram....	600	28,000	None	None
Average brightness, %	60.6	60.6	61.7	60.7
16% Bleach				
Exhaustion time, min.	195	195	195	195
Bacteria per gram....	None	None	None	None
Average brightness, %	76.9	77.3	77.9	77.2

* Isolated from paperboard.

bleach and, in two cases, to the 16% bleach. On the other hand, there was only a slight survival of the nonspore-forming species after exposure to the 2% bleach and no survival after exposure to the 8 and 16% bleach.

In view of the fact that complete sterility was not obtained after one sterilization period, it was decided to subject the pulp to three consecutive periods of sterilization, with time intervals of 24 and 72 hours, respectively. Even after the third sterilization period, complete sterility was not obtained; however, the bacterial content was only 165 bacteria per gram.

These carefully prepared samples were inoculated and subjected to the various increments of bleach. The bacteriological results are given in Table II. In a general way, these data agree with those obtained in the previous series. The differences were *(a)* no survival of bacteria for the 16% bleach; *(b)* no survival of *Bacillus sp.* for 8% bleach; and *(c)* no survival of *Aerobacter aerogenes* for the 2% bleach. The bacteria which survived in the pulp after three consecutive periods of sterilization were few in number, and their effect upon the subsequent inoculations of the pulp samples can be disregarded. It will be noticed in Table II that no bacteria were found in the pulp which had been inoculated with *Aerobacter aerogenes*. This would indicate that the bacteria which survived heating were not able to survive exposure to the 2% bleach. A careful examination of the bacteria which survived heating was made, and the results showed that a pure culture of the species *Bacillus luteus* was present.

Acknowledgment

This work was carried out with the cooperation of the Pulping Division of the Institute. The assistance of C. M. Koon and Philip Bloom is gratefully acknowledged.

Literature Cited

1. Koon, C. M., *Paper Trade J.* 111, No. 6:34-36 (Aug. 8, 1940); *Tech. Assoc. Papers* 23:222-224 (1940).

Extends Transparent Wrapping Quota

WASHINGTON, D. C., February 15, 1943—Manufacturers of glassine, greaseproof and genuine vegetable parchment papers may produce up to 100 per cent of the quantity they made during the base period under which they operate, the Director General for Operations ruled today through issuance of General Preference Order M-241 as amended. The base period is for the six months ending March 31, 1942. These types of wrapping paper had a quota of 85 per cent before issuance of the amended order.

Reforestation Curtailed for Duration

WASHINGTON, D. C., February 17, 1943—Reforestation of denuded land in the National Forests has been curtailed during the war to make more labor available for war work, the Department of Agriculture's Forest Service says.

Only limited planting in the National Forests is planned during the current year. This will be done by conscientious objectors in Selective Service camps, and a few cases by local labor or volunteer helpers.

Last year's plantings, a total of 55,832 acres, was 63 percent less than the acreage planted in 1941. Most of the 1942 planting was in the spring season with CCC and WPB labor. A total of 53,465,000 trees were planted during 1942, as compared with 144,272,000 in 1941.

Many of the Forest Service nursery personnel have been detailed to the guayule emergency rubber production project, and most of the nurseries will be kept on a maintenance basis until after the war. Several nurseries however are participating in the Department's experimental growing of Russian dandelion and other rubber bearing plants.

Artificial reforestation is still necessary on more than 2,400,000 acres within the National Forests. For the country as a whole, at least 25,000,000 acres must eventually be planted if these wasted lands are to be productive.

"Poor cutting practices and repeated burning in the past have made this huge reforestation program necessary," said Lyle F. Watts, chief of the Forest Service. "The most alarming part of it is that, although some operators are practicing excellent forestry, these wasteful processes are still going on in too many areas, adding to the total area on which artificial reforestation will be needed.

"We are therefore faced with three alternatives: Either we can let an increasing amount of our land go over into the permanently non-productive class, contributing little or nothing to the national economy; we can pay the heavy costs of restoring this land to productivity by artificial means; or we can put into effect the conservation measures necessary to keep our forest lands productive.

"With proper forest management, nature will carry on the reforestation job. Cutting practices and protection standards can be applied that will keep forest lands yielding successive crops of timber without depletion.

"There remains the problem of our millions of already denuded acres, on which the growing stock has been so depleted by past abuses that tree planting work is necessary to rehabilitate the lands. This work can be postponed in the present war emergency, but it will be one of our important postwar jobs."

Of the total national forest acreage planted last year, 26,413 acres were in the Southern National Forest Region, comprising the South Atlantic and Gulf Coast States, according to the Forest Service. Next largest acreage was in the North Central Region where 18,104 acres were planted, the bulk of it in the three Lake States. A total of 2,852 acres were planted in the Pacific Northwest Region; 2,420 acres in the California Region; 2,372 acres in the Rocky Mountain Region; 2,225 acres in the Northern Region (Montana and North Idaho); 1,116 acres in the Northeastern Region; 223 acres in the Inter-Mountain Region; and 107 acres in the Southwestern Region.

Eli de Vries Speaks on Post-War Exports

Set appropriately in the New Amsterdam Room of the Netherland Club, Eli de Vries, president of Parsons & Whittemore, the widely known paper exporters, entertained at a Makanan Rysttafel, which in English is a Javanese rice dinner, more than fifty representative members of the paper industry on Tuesday evening of this week.

Dr. Honig Speaks

The special guest was Dr. Pieter Honig, Commissioner for the Netherlands East Indies, formerly director of the Sugar Experimental Station and of the Rubber Institute in the Netherlands East Indies. Dr. Honig spoke at length in a most interesting manner on the political and economic conditions of the Netherlands East Indies where he had lived for a considerable number of years. He stated that the population of the territory was about 72,000,000 natives with a governing class of about 250,000 and he expressed the impression that, while mistakes have been made in ruling the country, in the main a good job had been done. He stated that the invaders had greatly devastated the country and that the work of rehabilitation after the war would be a difficult undertaking. He said many engineers and technicians would be needed for this work and that many of them probably would have to come from this country. He made an earnest plea for sympathetic and economic cooperation on the part of the American people.

Paper Exports after the War

Following Dr. Honig, Mr. de Vries spoke briefly on what he termed post-war exports. He stated that two questions were being asked by the American paper manufacturers: "Will we be able to export paper when the war is over?" "Will we be able to compete with European mills?" He stated that the answer to both questions was most positively yes. In answer to the first question, he stated that the types of unfair competition which had existed before the war would end in the world of tomorrow if the world was to live in peace and, under such circumstances, intimated that there would be a much better opportunity to develop export business. He said the second major factor to be considered was international labor. In answer to this he said that the standard of living throughout the world must be stabilized, the gross inequalities must disappear, and it was his fervent hope and belief that this, too, must be done if the world was to live in peace. Mr. de Vries said that the American paper manufacturer should start right now to study the post-war conditions. He urged that the paper manufacturers set up a research committee to study this problem thoroughly. Post-war discussions should not be left to Washington bureaucrats. He stated that the American paper manufacturers should do their exporting with recognized exporters. A very good guide, he pointed out, might be the United States Paper Exporters Council, which is composed of the most outstanding paper export firms in the United States. He stated that his company, which had been organized in 1853 and had been doing a world wide export business for many years, had been reorganized to build a foundation for sound post-war export business. He constantly emphasized that this matter should be taken up now.

After his set address, Mr. de Vries answered questions propounded to him by various guests at the dinner.

ELI DE VRIES

The Attendance

Present at the dinner were the following:—Folke Becker, Rhinelander Paper Co., Rhinelander, Wis.; W. J. Blackley, The Beveridge Paper Co., Indianapolis, Ind.; Graham Blandy 2nd, American Wood Board Co., Schuylerville, N. Y.; Gorham Bliss, Worthy Paper Co. Assn., West Springfield, Mass.; L. R. Boswell, Hummel-Ross Fibre Corp., Hopewell, Va.; Dwight L. Browning, Narragansett Coated Paper Co., Pawtucket, R. I.; A. A. Burrows, Burrows Paper Corp., Little Falls, N. Y.; Holley R. Cantine, Martin Cantine Co., Saugerties, N. Y.; G. T. Cockerill, Bathurst Power and Paper Co., Montreal, Canada; W. A. Duggan, Rhinelander Paper Co., Rhinelander, Wis.; G. H. Gerpheide, Hawthorne Paper Co.; T. W. Harrington, Crocker-McElwain Co., Holyoke, Mass.; N. Hannower, Linton Brothers & Co., Fitchburg, Mass.; D. L. Hartman, Mobile Paper Mill Co., Crighton, Ala.; J. N. Hazen, Hazen Paper Co., Holyoke, Mass.; H. C. Johnson, Sorg Paper Co., Middletown, Ohio; Harold R. Knott, Wausau Paper Mills Co., Chicago, Ill.; J. N. Logan, Newton Paper Co., Holyoke, Mass.; Carl Magnus, Wausau Paper Mills Co., Brokaw, Wis.; A. B. Milham, Bryant Paper Co., Kalamazoo, Mich.; Horace A. Moses, Strathmore Paper Co., West Springfield, Mass.; J. McEwan, Mohawk Valley Paper Co., Inc., Little Falls, N. Y.; Robert K. Nimmo, Narragansett Coated Paper Co., Pawtucket, R. I.; Cy Norton, Strathmore Paper Co., West Springfield, Mass.; D. W. Pratt, Champion Paper and Fibre Co., Hamilton, Ohio; J. H. Roberts, Beveridge Paper Co., Indianapolis, Ind.; James F. Ryland, Standard Paper Mfg. Co., Richmond, Va.; George C. Schmid, Falulah Paper Co., Fitchburg, Mass.; E. A. Sitzer, Hurlbut

Paper Co., South Lee, Mass.; J. E. Smith, Chesapeake Paperboard Co., Baltimore, Md.; A. J. Stone, Mohawk Valley Paper Co., Little Falls, N. Y.; R. M. Swaney, Franklin Paper Co., Holyoke, Mass.; E. A. Weihemayer, Jessup & Moore Paper Co., Philadelphia, Pa.; J. C. Wemyss, Groveton Papers Co., Groveton, N. H.; F. B. Whiting, Geo. A. Whiting Paper Co., Menasha, Wis.; G. C. Winlow, J. R. Booth, Ltd., Ottawa, Canada; R. J. Young, Burrows Paper Corp., Little Falls, N. Y.; John D. Zink, Strathmore Paper Co., West Springfie d, Mass.; E. A. Weihemayer, Jr., Jessup & Moore Paper Co., Philadelphia, Pa.; Phil A. Howard, Howard Publishing Co., Chicago, Ill.

Clarence A. Clough, New York & Penn. Co.; C. H. Cordes, Jessup & Moore Paper Co.; Wm. B. Darling, Riegel Paper Corp.; Alex Fenton, Mobile Paper Mill Co.; L. Gailer, Whiting-Plover Paper Co.; J. K. Hotchison, Allied Paper Mills; E. G. Murray, St. Regis Paper Co.; John Schock, Newton Falls Paper Mill; Arthur Schroeder, Pejepscot Paper Co., Inc.; S. O. S. Styles, Martin Cantine Co.; H. A. Westwood, United Paperboard Co.; H. J. Berger, PAPER TRADE JOURNAL; Chas. C. Walden, Jr., Walden Sons & Mott, Inc., and Edward J. Wunneke, 1st, of Boston Inter. Corp. All of the foregoing are from New York City.

E. I. de Vries, president; E. R. Southouse, vice-president; Wm. Flohr, vice-president; C. W. Hatch, secretary-treasurer; J. H. Newman, export manager; Benjamin Stibbe; Charles Rittenhouse; and Wm. S. Kaufman of Parsons & Whittemore, Inc.

Newsprint Cut May Be Less Drastic

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 15, 1943—The impression seems to be growing here that the outlook in respect to newsprint is for considerably less curtailment of consumption than was predicted some weeks ago. This is strengthened by forecasts from Washington that a second cut of not more than 10% is to start on April 1st, and that this might take care of the situation without necessity of further curtailment. The government policy of using the Selective Service Board to feed men to the lumber camps is reported to have eased the situation considerably, as previously there had been an exodus of these men into military service and war industries and great difficulty had been found in getting new men for the work.

The opinion seems to prevail that the representations of the newsprint industry for a higher price may be complied with if another cut in output is put into force in April. The matter rests with the Washington authorities, who are said to have recognized the justice of the claim, and who may revise the price upwards moderately when the next cut in production goes into effect.

David Feinburg to Head N.A.W.M.D.

David Feinburg of David Feinburg Company, Medford, Mass., has been re-nominated as president of the National Association of Waste Material Dealers, Inc., according to a statement just released from the Association's Headquarters in New York.

The annual meeting of the association is to be held in Chicago during the Convention and Wartime Conference of the Association, March 16 and 17.

New Power for Wisconsin Mills

Both the Fox and Wisconsin River Valleys will benefit from a new power source through completion of a new 30,000-kilowatt unit at the Bayside steam plant of the Wisconsin Public Service Corporation at Green Bay, Wis. The giant new turbo-generator unit recently was tested out satisfactorily and will be tied into the utility's entire system in Wisconsin.

Added to the 20,000-kilowatt production of the plant, this gives the paper mills and other industries a 50,000-k.w. source for power. It was located at Green Bay because of the ease and economy of securing waterborne coal via the Great Lakes.

Major improvement features include a hydrogen-cooled generator and a radiant type water tube boiler capable of producing 312,500 pounds of steam per hour at 665 pounds gauge, and 900 degrees at the boiler outlet.

Association of Pulp Producers

George R. Wallace, president of the Fitchburg Paper Company, Fitchburg, Mass., was re-elected president of the Association of Pulp Consumers at the annual meeting of the association on Tuesday. Norman F. Greenway, of Robert Gair Company, was named vice-president, and C. V. Maudlin was re-elected secretary-treasurer.

New directors chosen were R. F. Bellack, of Fox River Paper Corporation, Appleton, Wis.; F. E. Brown, of Manchester Board and Paper Company, Richmond, Va.; L. J. Long, of Crystal Tissue Company, Middletown, Ohio; George F. Moxley, of West Jersey Paper Manufacturing Company, Camden, N. J., and Austin P. Story, of Chillicothe Paper Company, Chillicothe, Ohio.

Kraft Paper Association

The annual meeting of the Kraft Paper Association was held on Tuesday, February 16, in the Jansen Suite at Waldorf-Astoria Hotel, New York, following a meeting of the executive committee the same morning.

The following officers and members of the Executive Committee were elected: President, W. J. Dixon; vice-president, J. L. Madden. Executive Committee: W. H. Anders, J. M. Arndt, H. P. Carruth, H. S. Daniels, E. S. French, J. H. Hinman, R. A. McDonald, S. M. Phelan, Jr., C. W. Smith, and N. S. Stone.

Dernell Every was reappointed as secretary-treasurer and T. K. Heston appointed assistant secretary-treasurer.

Institute of Paper Chemistry Meets

The trustees of the Institute of Paper Chemistry held a meeting at the Barclay Hotel, New York, on Sunday, February 14. Questions of policy were discussed. Ernst Mahler, chairman, presided, and the following were also present:

D. C. Everest, Marathon Paper Mills Company; John L. Riegel of Riegel Paper Corporation; Norman Wilson, Hammermill Baper Company; Dan K. Brown, Neenah Paper Company; J. D. Zellerbach, Crown Zellerbach Corporation; Henry P. Carruth, Brown Company; Sydney Ferguson, Mead Corporation; Hugh Strange of John Strange Paper Company; Westbrook Steele, executive director, and John G. Strange, secretary of the Institute.

Lieut. Killam Home on Leave

VANCOUVER, B. C., February 12, 1943—Lieut. David Killam, DSO, son of Lawrence Killam, president of the B. C. Pulp and Paper Company, recently returned home on leave for the first time in almost three years. Lieut. Killam is one of Vancouver's naval heroes, being decorated for valor at Dunkirk. During his return to Vancouver, B. C., he was married to Miss Elizabeth Hebb. This Killam-Hebb wedding is the third union between three sons of Lawrence Killam and three daughters of the late Prof. T. C. Hebb. All three of the sons have been connected with the pulp and paper industry.

It was in March, 1940, that Lieut. David Killam left Vancouver to proceed with a group of Canadian probationary officers en route to a British training establishment. While still training at the shore establishment, he volunteered to go with a demolition party to Le Havre to blow up installations before the Nazi forces arrived. With him at Le Havre was Lt. Cornelius Burkes of Vancouver.

His destroyer—the first naval vessel upon which he served—proceeded to St. Valerie to aid in the evacuation of the remnants of the British 5th Division. Three times he made a dash for the beach in speedboats from the destroyer; three times he was capsized by near misses from the German shore batteries. This was the action for which he was awarded the Distinguished Service Cross.

Actually Lt. Killam has never attended an investiture. At the time when the king was supposed to present him with the DSO, he was serving in a motor launch off West Africa. He has served continuously in motor launches off West Africa for 16 months.

During this time he had been attacked neither by submarine nor by Nazi aircraft.

"West Africa is the only place in the world where motor launches are doing the work of corvettes. The weather there is pretty good except for the occasional tropical storm," Lt. Killam said.

Before going to West Africa, Lt. Killam was doing instructional work in invasion barges. If he returns overseas, he hopes to be posted to one of the Royal Navy's new high speed motor torpedo boats or motor gunboats operating in the English Channel.

Charles W. Williams & Co. Gives Dinner

Charles W. Williams & Co., paper merchants at 309 Lafayette street, New York City, entertained with a cocktail and dinner party in the Washington Square Room of the Fifth Avenue Hotel, 24 Fifth avenue, on Wednesday evening, February 17. The guests were representatives of the firm's mill connections who were in New York to attend the joint annual conventions of the American Paper and Pulp Association, the National Paper Trade Association, the Newsprint Manufacturers of the United States, the Writing Paper Manufacturers Association, and the Cardboard Manufacturers Association. Sharing the duties of host for the Charles W. Williams concern were Alfred E. Williams, president of the house; George J. E. Buell, treasurer; William E. Madden, secretary; and E. J. Kellerer, assistant treasurer.

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SINCE 1828
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According to repeated tests at a Middle Western mill this is exactly what is being accomplished by a Warren Stock Pump, Type 8-SOD-17. Such performance, while not guaranteed, is typical of that extra PLUS that is engineered into every Warren Pump which makes it possible for them to handle the toughest job in your mill . . . and with a minimum of upkeep and shutdowns. Warren Pumps are built to meet specific requirements . . . requirements that do not differ, basically at least, from yours. Warren Stock Pump Bulletins go into further details and are yours for the asking; also Warren Engineering Service is at your disposal.

WARREN PUMPS

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N. E. Paper Merchants Meet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 15, 1943—John R. Whitney, Whitney-Anderson Paper Company, Inc., Springfield, Mass., was elected president of the New England Paper Merchants Association at the annual meeting of the organization, held February 10 at the Parker House. Other officers elected included the following: Vice-President Wrapping Paper Division, Samuel L. Ginsburg, Ginsburg Brothers, Inc., Somerville, Mass.; vice-president Fine Paper Division, William H. Walpole, Rutter & McNaught, Inc., Boston; treasurer, Frank B. Cummings, Newton, Mass.; clerk of the corporation, F. Bendel Tracy, Fort Hill Paper Company, Boston. Directors, John F. Blackman, D. F. Munroe Company, Boston; Paul M. Jones, Storrs & Bement Company, Boston; J. R. Livingstone, Kendall Paper Company, Cambridge, Mass.; Frank H. Merrill, Andrews Paper Company, Boston; Leon M. Poore, John Carter & Co., Inc., Boston; Charles A. Shaw, Whitney Brothers, Inc., Boston; C. W. Dearden, Butler-Dearden Paper Service, Inc., Worcester, Mass.; Sterling R. Chatfield, the Minotte E. Chatfield Co., New Haven, Conn.; Albert L. Logan, Providence Paper Company, Providence, R. I.; Harold R. Robinson, C. H. Robinson Company, Portland, Me. All officers and directors were unanimously elected.

The nominating committee was composed of Charles S. Proctor, Frank H. Winter, and Robert M. Stone.

Among the 54 present was Arthur H. Chamberlain, executive secretary of the National Paper Trade Association, who gave a preview of events scheduled for the National Paper Convention in New York the week of February 14.

Walter R. Guild, executive secretary of the association, announced that seven paper merchants had become members during the year and that there were now 52 members.

Herbert Black, foreign desk editor of the *Boston Evening Globe*, the guest speaker, discussed "Behind the War News." His analysis of the political and fighting conditions on all of the war fronts was very enlightening.

Paper Demand Active

INDIANAPOLIS, Ind., February 14, 1943—Demand for most grades of paper continued active last week with supplies becoming increasingly scarce in many items. Most paper is hugging the ceiling prices fixed by OPA and there is certain to be lower supplies during the next few months, the local trade believes.

With spring just around the corner the manufacturers and jobbers of building paper and roofing are wondering what is in store. Last year was a very poor one for them. Even so, stocks in wholesale and retail hands are very low and the first of the year showed one of the lightest inventories of record. The housing situation in this highly defense area and in others of the state is bad and it is believed government officials will have to permit much more new construction this year than last.

The threat of another cut in use of newsprint has scared local publishers. Buying of newsprint was heavy last week and orders exceed the present supply in this territory. Thus far there has been no appreciable decrease in advertising lineage and the size of the daily papers remains virtually the same. Short cuts are being taken to save newsprint and papers left in the hands of the publishers, or given free to advertisers will be watched carefully.

Essential Activities

In reply to the letter of E. W. Tinker, executive secretary, American Paper and Pulp Association, published on page 17 of the February 11 issue of the PAPER TRADE JOURNAL, the following telegram was received from Collis Stocking of the War Manpower Commission:

"Manufacture of the following paper and pulp products has been classified as essential: Cable insulation, Drafting, Chart and Map (Government), Blueprint, Photographic and other Sensitized, Safety-base stock, Condenser tissue, Gasket, Tracing, Photographic wrapping, Glassine, Greaseproof, Hospital wadding, Filter, Absorbent for impregnation, Container board, and Heavy duty multiple-walled sack, Paper board boxes and containers. Manufacture of other pulp and paper products have so far been excluded from the list. This does not mean that persons engaged in the manufacture of those pulp and paper products which have so far been excluded from the list on essential activities are in a nondeferable occupation or activity."

In reply to this Mr. Tinker sent the following telegram:

"In telegram to me signed Collis Stocking, War Manpower Commission, dated February 9, certain papers were listed as essential. This is move in right direction but totally inadequate to prevent majority employees seeking other work account uncertainty status their employment. Only effective procedure is immediately to declare all grades paper essential. Furthermore no value declaring any paper essential unless all wood pulp, its primary raw material, first identified as essential. All grades of paper are currently going into Government, war and essential civilian use with nonessential uses already virtually eliminated by control orders originating Pulp and Paper Branch War Production Board. If you will follow suggested procedure will greatly simplify administration, avoid innumerable protests, still retain adequate control situation and completely protect all public interests."

Mr. Tinker has received the following letter from Donald W. Wilson, chairman War Production Board regarding the same subject:

"This is with reference to your telegram and letter of February 5, 1943.

"Neither the War Production Board nor the Office of Civilian Supply has issued any statement to the effect that the paper and pulp industry is non-essential. It is perhaps unfortunate that some of the discussion arising out of Congressional investigations of the manpower problem, coming at the same time as the publication of the War Manpower Commission's list of non-deferable activities, have together given rise to speculation as to other industries which might be curtailed in the immediate future.

"There will of course have to be some further curtailment of a number of industries in some localities in the months ahead in order to release manpower for direct war production. Please be assured that any action which may have to be taken with reference to the paper and pulp industry will be carefully reviewed by representative people in the industry."

Mr. Tinker thought "this letter indicates a fine cooperative spirit and recognition of the industry's position in the war economy and will be of interest to everyone in the industry."

FARREL ROLLS MEET TODAY'S REQUIREMENTS

TODAY, with the ever-increasing scarcity of labor and the difficulty of obtaining new equipment of any kind, it is more important than ever before that calender rolls retain their accuracy and finish as long as possible with minimum regrinding.

Farrel rolls meet these requirements. Long, maintenance-free service is assured by the uniform hardness and depth of their chilled body surfaces, their accurately ground and smoothly finished bodies and journals, and their scientifically correct shape and amount of crown.

Farrel rolls are made of chilled iron, extra-hard Farreloy or Farrel Ni-Hard, in any diameter from 4" to 72" and any length up to 312".

We regret that the war emergency restricts the purchase of rolls but we can supply any for which customers provide priority rating and approved order.

FARREL PAPER MACHINERY

Rolls
Calenders
Roll Grinding Machines
Calipers
Gears
Speed Reducing Units
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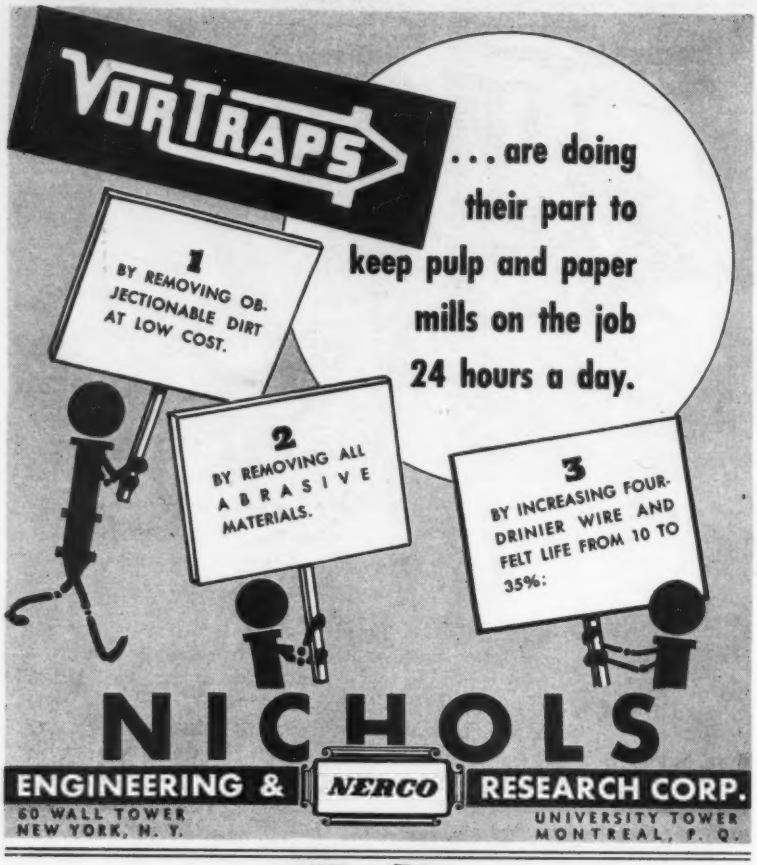
Flexible Couplings

FARREL-BIRMINGHAM COMPANY, INC.
50 State St., Ansonia, Conn.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. . . are doing their part to keep pulp and paper mills on the job 24 hours a day.
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Paper Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 17, 1943—Eastern Corporation has been awarded the contract for furnishing the Government Printing Office with 48,800 pounds of white chemical wood ledger paper at 7.72 cents. Other paper awards recently announced include the following:

Walker, Goulard Plehn Company will furnish 20,734 pounds of white supercalendered book paper at 8.69 cents and the same firm will also furnish 11,004 pounds of white M.F. book paper at 8.44 cents. Paper Corp. of U. S. will furnish 47,400 pounds of white offset book paper at 7.3 cents and Marquette Paper Company will furnish 98,100 pounds of white chemical wood writing paper at 7.25 cents.

Walker Goulard Plehn Company, Inc., will furnish 125,000 pounds of 35 x 45 white M.F. book paper and 125,000 pounds same, 36 x 56 at 7 cents. R. P. Andrews Paper Company will furnish 40,000 pounds of tan bristol board at 10.25 cents and Barton, Duer & Koch Paper Company will furnish 148,460 pounds of cream postal card bristol board at $10,169.52.

Barton, Duer & Koch Paper Company will furnish 134,000 pounds of white M.F. book paper at 7.14 cents and the Eastern Corp. will furnish 150,000 pounds of white chemical wood ledger paper at 7.47 cents. Walker Goulard Plehn Company will furnish 102,400 pounds of 25% rag, white ledger paper at 10.92 cents and Cauthorne Paper Company will furnish 212,732 pounds of white chemical wood writing paper at 6.39 cents.

Stanford Paper Company will furnish 218,531 pounds of white chemical wood writing paper at 6.46 cents; D. L. Ward Company will furnish 208,706 pounds same at $6.45 per cwt.; Marquette Paper Company will furnish 2,000,000 pounds of white sulphite writing paper at 7.10 cents and R. P. Andrews Paper Company will furnish 50,000 pounds of 25% rag, white bond paper at 11.07 cents.

Walker Goulard Plehn Company will furnish 56,509 pounds of 25% rag, ledger paper at 11.39 cents and the same firm will also furnish 48,990 pounds of same at 11.39 cents. R. P. Andrews Paper Company will furnish 4,200 sheets of blue railroad board at $39.20 per M sheets. Franklin Research Company will furnish 396,160 pounds of white litho chart paper at 8.825 cents and R. P. Andrews Paper Company will furnish 32,000 pounds of chemical wood manila paper at 7.66 cents.

War Bonds for Machinery Salvage Methods

War Bonds to the extent of $650 have been awarded in a nationwide contest designed to reveal to industry the most outstanding methods of salvaging and maintaining machinery under wartime conditions. Sponsored by Metallizing Engineering Company, Inc., Long Island City, N. Y. this is the second of a series of similar contests open to users of any metal spraying equipment in the United States and Canada.

1st Prize, a $250 War Bond, went to John Frisch, mechanical engineer, Price Bros. & Co., Ltd., Riverbend, P. Q. In his entry, Mr. Frisch described how irreplaceable bearing journals weighing 2,000 lbs. each, used on heavy paper machine rolls, are quickly salvaged like new with only 28 lbs. of sprayed steel.

A $150 War Bond, 2nd Prize, was awarded to George E. Morgan, Machine Foreman, Pressed Steel Car Co., Inc., McKees Rocks, Pa., for his procedure in maintaining the packing area of a three-ton hydraulic ram.

3rd Prize, a $100 War Bond, was won by Bertram L. Bailie, Plant Engineer, Hiram Walker & Sons Inc., Peoria, Ill. Mr. Bailie outlined the only method developed for maintaining an accurate fit on 6" and 8" plug cocks used in distillery valves. By building up these brass plug cocks with sprayed bronze, original dimensions are rapidly restored, and service-life doubled.

A $50 War Bond went to each of the following: T. C. Kirkland, Canadian Vickers Ltd., Montreal, P. Q., for describing how a mis-machined corvette shaft weighing 28,800 lbs. was salvaged; H. N. Pendleton, Dravo Corporation, Pittsburgh, Pa., for details of reclaiming an air compressor crankshaft; and L. MacMillan in cooperation with E. B. Eddy Co., Ltd., Hull, P. Q., for their description of the building up of a 19-ft. shaft used in making cores for newsprint rolls.

Entries were judged by Arthur M. Perrin, President of National Conveyors Co., Inc., New York, Mr. Perrin, long an authority on industrial salvage, is a member of the American Society of Mechanical Engineers, Committee on Industrial Conservation. He is also Associate Editor of the Salvage Manual Committee, being prepared by the Industrial Salvage Section, Conservation Division of the War Production Board.

Cloth-making was at first one of the household industries of New England. Our grandparents raised their own sheep, our grandmothers carded, twisted and spun the wool to be woven into sturdy homespun cloth.

Towards the end of the 18th century machinery began to take the place of hand-work, but you may still see heirloom spinning wheels in many of our best New England homes —ornamental reminders of an art perpetuated mechanically by the third generation of the DRAPER family.

DRAPER FELTS are modernly made, but with the same old-fashioned zeal for perfection. You'll be satisfied with DRAPER FELTS!

Draper Felts Favor Efficiency

DRAPER BROTHERS COMPANY

Woolen Manufacturers Since 1856

CANTON, MASS.

OUR REPRESENTATIVES *to serve you*

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C. K. BEECHER, Delaware, Ohio

W. L. CAMPBELL, Savannah, Ga.

E.R. LELOFF, Vancouver, Wash.

RALPH E. BRIGGS, Canton, Mass.

Kalamazoo Discusses Coatings

The Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry met at the Park American Hotel, February 4, 1943. F. D. Elliott of the Michigan Research Laboratory, presided as Chairman. The speakers were Ralph Nazzaro, American Resinous Chemicals Corporation, Peabody, Mass., and John F. Halladay, American Coating Mills, Elkhart, Ind.

Mr. Nazzaro spoke first on Synthetic Resins and particularly on the application of synthetic resin emulsions to paper and paper board. Mr. Nazarro said the war has stimulated the development of synthetic resins as replacements for rubber and shellac and these replacements, particularly in the emulsion form have invaded many industries among which may be mentioned adhesives, leather, textiles and paper. Paper and paper board packages for war use require large quantities of adhesives, and coating and laminating chemicals to produce waterproofness and moisture vapor resistance for shipment all over the world. Specifically the acrylates and methacrylates are most suitable from the standpoint of water resistance and flexibility and the vinyl polymers are an excellent substitute for latex except for waterproofing. The latest development in synthetics by Mr. Nazzaro's company is a group of polymers, built up from soy bean fatty glycerides, which are still very much in their infancy but exhibit many of the properties of natural rubber. Mr. Nazzaro passed around samples of "Vulprene" which is one of the soy bean fatty glyceride polymers and it was interesting to note how closely in appearance and feel it was to new rubber.

Mr. Halladay was the next speaker and the title of his talk was "General Testing Methods for Water Vapor Transmission of Paper, Paper Board and Synthetic Films." Mr. Halladay traced the history of water vapor transmission measurements, which were pioneered to a large extent by Allen Abrams and George Brabender of the Marathon Paper Mills, down to the most recent work in this field. The American Coating Mills have carried out many hundreds of moisture vapor transmission determinations during the past few years and by means of the Southwick and Rhodes moisture vapor transmission apparatus and a highly developed technique, they have been able to get significant and clearly reproducible results in the testing of many forms of paper, paper board, regenerated cellulose films and synthetic resin films of all kinds.

Following the talks of both speakers, a highly interesting question and answer forum ensued.

The following were among those present: R. C. Alden, G. H. Argue, Ralph Atkins, Willard Barnhart, Ray L. Barton, John Bauman, A. F. Bigelow, Harry C. Bradford, Robert Buss, O. W. Callighan, Fred L. Chappell, Jr., W. G. Curry, G. F. Des Autels, Arthur G. Dreis, F. D. Elliott, D. R. Erickson, H. S. Faram, L. E. Fitzgerald, Charles Gardner, R. C. Germanson, J. F. Halladay, F. R. Hamilton, W. F. Hathaway, J. A. Heenan, A. E. Hughes, Ivan L. Lester, S. C. Lyons, Elbert G. Milham, Lee H. Mimms, Ralph T. Nazzaro, P. F. Neumann, C. H. Olmstead, Al Perlick, W. M. Russell, M. Rutz, A. L. Sherwood, Baldy Smith, Hugh Smith, E. B. Taylor, W. S. Taylor, B. M. Thomas, W. R. Tobin, Joe Waber, Harris O. Ware, R. T. Washburn, Frank Whittington, and Merle R. Wilkins.

Wisconsin Mills Run Steady

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 15, 1943 — Aggregate production in Wisconsin mills and allied industries has been running practically horizontal for the last several months, since the December employment compilation by the Wisconsin Industrial Commission again reveals no appreciable change.

December employment showed a gain of only 0.4 per cent over November, with 23,300 workers on the payrolls as compared with 22,200 in November. The total, however, is 2.8 per cent below a year ago in the same month. Boxboard and converting plants in the Milwaukee metropolitan area accounted for most of the slight gain, with 1,949 workers reported in 19 establishments, 2.6 per cent more in December than in November. This area is heavily in war production.

Average weekly payrolls showed an upturn of 7 per cent, going from $820,000 in November to $826,000 in December. These totals are 9.8 per cent higher than December, 1941, when workers were receiving $752,000 weekly. Milwaukee area payrolls were up 3.8 per cent to a weekly average of $69,242, as compared with November.

Transition in a number of mills from 6-hour to 8-hour shifts have stretched the average work week per employee to 44.2 hours for the mills of the entire state, and 46.9 hours in the Milwaukee area. The hourly rate now averages 80.1 cents for the state and 75.7 in the Milwaukee plants. Weekly earnings average $35.42 for the state and $35.53 in Milwaukee.

W. L. Shea Heads Bradner Smith & Co.

W. L. Shea, for the past thirteen years identified with Bradner Smith & Co., Chicago, Ill., has been elected president to succeed the late A. R. Martin, who had acted as president since the death of R. S. Bull about five years ago.

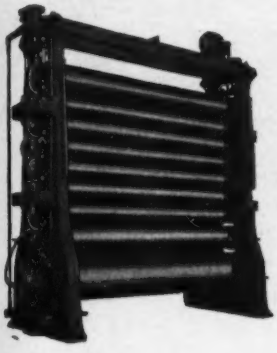
Mr. Shea, widely known as "Bill" to his many friends, has been the aggressive vice president and sales manager of the Chicago jobber firm and his experience in the paper industry dates far back to the years when he acted in a sales executive capacity with the Seaman Paper Company. The board of directors selected A. J. Westrick to serve as chairman of the board with the supervisory control of the various subsidiaries and affiliates of the concern. Announcements also list the following officers to work with Mr. Shea and Mr. Westrick: J. P. Cunningham, George Krisinger, R. W. Forsythe, F. W. Sinsabaugh, H. R. Ban Petten, Ralph Laue and Ed Hayburn, vice presidents; G. C. Jackson, secretary, and H. T. Smith, treasurer.

Edward W. Menke Resigns

OSWEGO, N. Y., February 15, 1942—Announcement is made of the resignation of Edward W. Menke as general manager of the local branch of the St. Regis Paper Company, after having been connected with the concern for several years. He was graduated from the Armour Institute of Technology in 1914 and for the next three years served as draftsman for the Bates Valve Company. Later on he served as chief engineer and following a number of years in business he was made general manager of the engineering and machine division of the local plant.

LOBDELL

Choice of the Leading Paper Mills

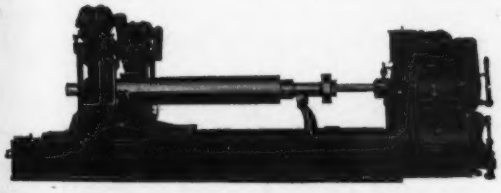


LOBDELL CALENDER STACKS

are accurate, durable and easily operated. Roll lifts, controlled from the floor, may be operated by electric motor, hydraulic pressure or hand ratchet. Up-to-minute automatic lubrication or anti-friction bearings as service indicates.

LOBDELL MICROMETER ROLL CALIPER

Indispensable in keeping check on condition of rolls. Extremely accurate, light in weight and easily adjusted to varying roll diameters 7" to 30", 8" to 36" and 9" to 42".



LOBDELL ROLL GRINDING MACHINES

are the "last word" in roll grinding. They are compact, convenient and accurate and embody three exclusively Lobdell features. 1. The automatic crowning device, no gears, cams or formers to change, one simple setting of micrometer scale to table for any predetermined crown. 2. Provision for maintaining perfect alignment of bed. 3. V-Belt wheel drive with increased power, rigidity and convenience.

LOBDELL PURALOY ROLLS are made of an exclusive, LOBDELL developed alloy having extra hardness and corrosion resistance to meet the extra severe service of water finish, etc. "PURALOY" ROLLS are NOT AVAILABLE for the duration of the war.

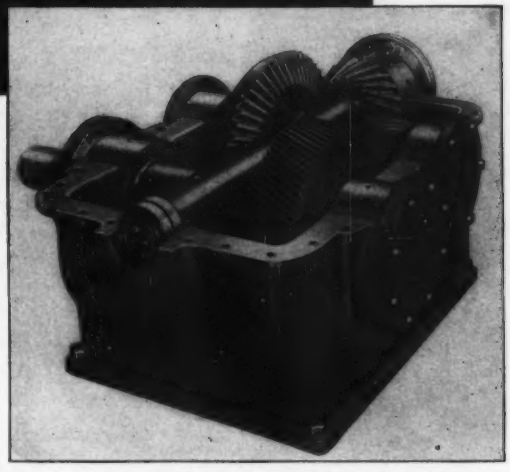
LOBDELL

COMPANY

108 Years in Business

WILMINGTON • DELAWARE

Sandy Hill HYPOID CORNER DRIVES



KEEP 'EM ROLLING

Uninterrupted, speedy production is the key-note today . . . with material and power, man and mechanical, more precious than ever. The smooth, power-packed performance of Sandy Hill Hypoid Corner Drives helps you gear your machines into the war effort with patriotic efficiency.

Let Sandy Hill's Engineering Staff help you keep your present equipment primed for peak performance. Consult us about your problems, without obligation.

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PULP & PAPER MAKING MACHINERY SPECIALISTS

HUDSON FALLS, N. Y.

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger
EDITOR

Vol. 116 February 18, 1943 No. 7

THE YEAR IN PAPER

Production of paper in the United States in 1942 is estimated at 16,522,000 tons, which is 4.5% less than the output of 1941, which totaled 17,304,143 tons. The capacity of the industry is estimated at 18,350,000 tons, compared with 18,000,000 tons for 1941. The operating ratio for 1942 averaged 90%.

Three classes of paper and paper products reported increased production for 1942. The writing paper division produced 827,000 tons, an increase of 12%; the tissue division made a new high record of 980,000 tons, compared with 910,493 tons in 1941; building paper increased to 750,000 tons, from 721,312 tons in 1941. Paper board production was 7,150,000 tons, compared with 8,146,382 tons in 1941; wrapping paper output was 2,742,000 tons, compared with 2,745,815 tons in the previous year.

Newsprint production in North America totaled 4,407,000 tons, a decrease of 7.9% from 1941. Of this total Canada produced 3,177,000 tons or 72%; the U. S. 95,300 tons or 22%, and Newfoundland 277,000 tons or 6%. North American machines averaged 75% of a capacity estimated at 5,840,000 tons annually. Shipments exceeded production by 32,000 tons and mill stocks in the three countries totaling 200,000 tons at the end of 1941, were reduced to 168,000 tons at the end of December, 1942. Overseas shipments totaled 314,000 tons, a 52% decrease from 1941. U. S. exports were about 18,000 tons. Publishers figures indicate that 3,800,000 tons of newsprint was consumed in 1942, or 130,000 tons less than in 1941.

Kraft paper production established a new high record for the fourth consecutive year in 1942. The increase amounted to 3%. New orders, and shipments, did not match the production record, however. New orders were 5.5% below the 1941 record, and shipments were 2% lower. At the end of 1942, unfilled orders were 16% less than on January 1, while stocks of finished paper on hand at the mills increased 82% during the same period.

Writing paper production increased sharply in 1942 on account of their importance to the war effort. Total production in 1942 is estimated at 827,000 tons, compared with an actual production of 737,827 tons in 1941. Production of other fine papers for 1942 is estimated at 218,000 tons, compared with 211,580 tons in 1941. In the first half of 1942, 43% of the total U. S. output of rag content writing paper was sold direct to the U. S. Government and agencies; in the second half of the year the amount increased to 57%. Government requirements accounted for 40% of the total production of sulphite writing papers in the last six months of 1942.

Paper board production for 1942 is estimated at 7,150,000 tons, a decrease of 9% below the all-time annual output of 7,857,500 tons in 1941. The average weekly production was 138,000 tons in 1942, compared with 148,000 tons in 1941. The year opened with peak production and sharply declined after the first quarter to improve late in the summer. Container board represented about one-half of the total output. The percentage of hours operated shows that some mills, under pressure of orders, operated on the seventh day and the percentage rose over 100%. In the first quarter of 1942, the high average of 1941, of 92%, was reached. A decline occurred in the second quarter from 100% to below 70%. Slow improvement followed which ended in November. In response to the drive to salvage waste paper, paper board mills built up inventories to a new high in September, of 360,000 tons in hand, or over 53% above January, 1941. The average weekly receipts of mixed paper in the fourth quarter of 1942, were 87,000 tons; consumption, 82,700 tons. The average price of mixed paper was $9.21 per ton in 1942, compared with $10.70 per ton in 1941.

Uncoated book paper production for 1942 was 8.6% less than in 1941. In 1941, from May on, the industry operated at over 100% of 6-day capacity and this rate was maintained until April, 1942. Book paper manufacturers operating under Order M-241, averaged 80% for the base period, September 1, 1941, through March 31, 1942. Coated book paper production declined lower than uncoated paper, production being 40% under 1941. No limitation was placed on coated book paper, other than through coating base stock, which was included in the limitation on uncoated book paper. Government regulations on raw materials, manpower and transportation, make the future rate of production problematical.

Wood pulp production in the United States for 1942 totaled an estimated 10,233,000 tons, compared with 10,049,000 tons in 1941; thus establishing a new high record. Production of bleached sulphite totaled 1,723,000 tons; unbleached sulphite, 1,209,000 tons; bleached sulphate, 811,000 tons; unbleached sulphate, 3,918,000 tons; soda pulp, 453,000 tons; semi-chemical and chemical screenings, 226,000 tons. Production of groundwood pulp, including screenings, totaled 1,893,000 tons. Imports of wood pulp, all grades, aggregated 1,200,000 tons and total exports amounted to 383,000 tons.

The paper industry is estimated to have consumed 10,700,000 tons of wood pulp, all grades, in 1942, and will probably require 8,600,000 tons in 1943, compared to actual consumption of 11,134,440 tons in 1941, and with 9,781,739 tons in 1940. Waste paper consumption is estimated at 5,500,000 tons for 1942, compared with 5,936,231 tons in 1941, and 4,667,502 tons in 1940. Other fibers and fillers actually consumed in 1942 are estimated at 2,000,000 tons, compared with 2,010,376 tons in 1941.

Patents at Work

A statement of the policy of the United States Government relating to the patents formerly owned by residents of enemy and enemy-occupied countries, has just been issued by the Office of Alien Property Custodian of the United States, under the title of "Patents at Work".

This booklet explains that the 50,000 patents formerly owned by the aliens as designated, represent research achievements of great potential value. The Office offers these patents for use by American industry. It states that they will have high usefulness as a means toward winning the war and as a contribution toward rebuilding our peace-time economy.

A separate index of patents is enclosed in the booklet. Patents vested in the Alien Property Custodian include many of possible interest to the paper industry. Among these are 239 patents on paper making and fiber liberation, 174 on paper manufactures, and 56 on paper receptacles.

Classified lists of vested patents and patent applications are sold for 10 and 25 cents and are obtainable from the Office of Alien Property Custodian, Chicago, Ill.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1943		Corresponding Weeks—1942	
January 2	76.0	January 3	102.2
January 9	86.8	January 10	103.5
January 16	88.0	January 17	105.0
January 23	88.0	January 24	105.0
January 30	87.2	January 31	104.3
February 6	87.2	February 7	103.7

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1942	104.5	103.9	102.9	100.4	95.3	87.4	75.8
1943	87.6	....	....	....	....	....	...

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1942	80.8	82.8	90.6	86.8	80.1	90.5
1943	....	....	....	....	....	....

COMPARATIVE YEARLY SUMMARIES

	1936	1937	1938	1939	1940	1941	1942	1943
Year to Date..	75.7	89.0	63.9	76.7	89.1	86.1	104.3	87.5
Year Average.	80.4	79.8	71.5	83.4	85.6	97.4	90.5	...

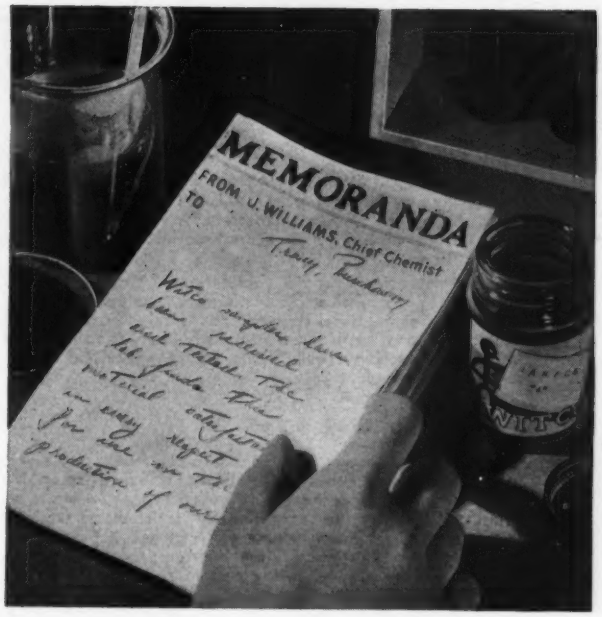
* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1937	83	89	89	91	88	80	69	77	72	70	57	47	75
1938	56	63	63	60	60	59	59	60	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	82	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	75	76	81	82	77	84
1943	86	..	..	..	..	..	..	..	..	..	..	..	..

Week ending Jan. 2, 1943—62
Week ending Jan. 9, 1943—82
Week ending Jan. 16, 1943—88
Week ending Jan. 23, 1943—88
Week ending Jan. 30, 1943—88
Week ending Feb. 6, 1943—89

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.



HAVE YOU TRIED
WITCO CARBON BLACK No. 11?

WITCO CARBON BLACK NO. 11 is a pellet black of the dustless type especially produced for use in paper manufacture. It is more economical for this purpose yet at the same time gives finer, more uniform results because of its special advantages. It is cleaner than the uncompressed black generally used in paper making . . . disperses better . . . and is more easily incorporated into the beater. Take this opportunity to economize and improve the quality of your black papers—write for samples of WITCO CARBON BLACK NO. 11.

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SPRACO EQUIPMENT FOR PAPER MILLS

BATTERY SPRAY MOISTENING EQUIPMENT

For the application of moisture in the form of coarse spray, fine spray or mist of uniform density across any desired width of web, with controls for varying the amount of moisture sprayed, at the same time maintaining uniform distribution.

Used extensively for the elimination of production difficulties due to uncontrolled moisture content. Improves finish, increases fibre strength and flexibility, eliminates static, prevents warp and waste. Each installation designed to meet operating requirements for any specified width, weight and speed of paper.

SPRACO SHOWER PIPE

The Spraco Shower Pipe consists of a number of direct pressure nozzles delivering a flat fan-shaped spray installed in the supply header to cover any given width of wire. It provides an exceptionally satisfactory washing effect with a minimum volume of water and is particularly desirable where water costs are high or production operations may be curtailed during certain seasons of the year when the water supply is limited.

SPRACO HUMIDIFYING SYSTEMS

This equipment is particularly adapted to maintaining the proper moisture content of stock in storage and cutting rooms. It is made up in units to fit any specified space.

Compressed air operated atomizing spray heads, installed on overhead piping, produce a finely divided spray that is completely absorbed by the atmosphere, without precipitation or drip. Automatic humidity control units start and stop the sprays, and keep relative humidity within close limits over a wide range of operating conditions. The system is easily installed and is free from maintenance troubles.

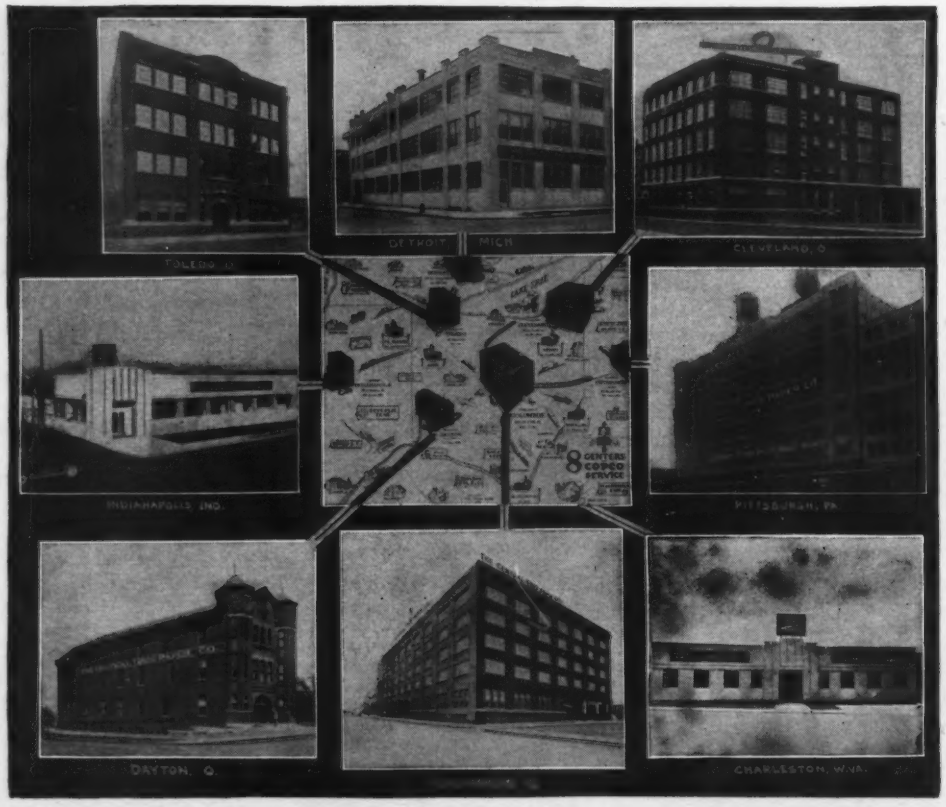
SPRACO SELF-CLEANING STRAINERS

Spraco strainers strain out dirt, sediment, scale, and other troublemakers from your liquid supply lines. It takes only a few seconds for a strainer to clean itself thoroughly. A rapid opening and closing of the flushing valve is all that's needed. Sturdy, reinforced strainer cylinder has extra large surface for free, unretarded flow. Sizes for all needs —for supply lines ½" to 8" in diameter. Regularly supplied in bronze, brass, and cast iron. Special materials for corrosive liquids.

ENGINEERING SERVICE

The services of Spraco engineers are available for consultation work, and inquiries are solicited from paper mills having production problems for which the spray method of application might offer a satisfactory solution.

SPRAY ENGINEERING CO., 118 CENTRAL ST., SOMERVILLE, MASS.



8

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Warehouses

Serve the

Paper needs

of the

Central States

from

Detroit • Cleveland
Pittsburgh • Dayton
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Charleston

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The Central Ohio Paper Company

Columbus, Ohio